The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING

VOL. 23. No. 1 TULSA, OKLAHOMA, DECEMBER 6, 1923

Copyright, 1923, by
The Petroleum Publishing Co.

Output Drops 163,849 Bbls. in Two Weeks

Average daily production in United States week ending Dec. 1, 2,096,179 bbls.

Production of Crude Declined 75,655 Bbls. Last Week. Big Slump at Powell Continuing. California Lower

Loss in daily production in United States week ending Dec. 1, 75,655 bbls.

By Andrew M. Rowley

The average production of crude petroleum in all oil fields of the United States has decreased 163,849 barrels daily during the past two weeks. Following the record breaking decline registered during the week ending Nvember 24, when the average daily output fell 88,194 barrels, production during the past week decreased 75,655 barrels daily. As during the previous week, the Powell Field in Texas was chiefly responsible for the big decrease, the average daily output of that field dropping from 264,000 barrels for the week ending November 24 to 195,811 barrels for last week, a loss of 68,189 barrels in the daily average.

That the enormous decline in production for the United States, recorded during the past two weeks, will be continued during this present week is indicated by the fact the Powell Field started this week with a production which was slightly over 50,000 barrels less than the average made by the field last week. In other words, the production of Powell on Sunday of this week had fallen to 135,500 barrels and there was nothing to indicate the output of the field would be any greater during the remainder of the week in fact, it is expected confidentially the decline in its average daily output for this week will even exceed the great drop registered last week.

What the Large Decrease Means

The situation affecting the oil industry has changed for the better even more rapidly than was the transition from optimism to depression early last spring. Oil men everywhere realized instantly a decrease of 88,194 barrels a day in the production of crude throughout the United States, with indications this decline was not a temporary condition, meant the overproduction menace which caused the depression had become a thing of the past. And with a further drop of 76,655 barrels daily last week, the optimism engendered by the decrease of the week before became more intensified and is being shown in numerous ways each significant of the general trend of conditions.

The decrease in production has resulted in a virtual lifting of the proration order by the purchasing companies in the Mid-Continent territory. In fact, it has done more. Buyers of crude now are more active in connecting with wells than for a long time and there is actual competition in the efforts to procure oil. A number of the refineries in widely separated areas are paying premiums for crude, which is regarded as the first step in a general increase in the posted prices. Operators everywhere are hastening their plans for new development work and the wildcatter has taken a new lease on life and plans are being made for a thorough testing of many sections which give promise of oil production.

Production Nearing Consumption

The peak of production of crude petroleum in the United States was reached during the week ending July 14, when the average daily output amounted to 2,320,514 barrels. According to Government figures, the average daily indicated consumption of crude during July amounted to 1,974,032 barrels. In other words, the production was 346,482 barrels daily greater than the consumption. During October the indicated consumption for the United States averaged 2,035,581 barrels daily, based on the deliveries of domestic and imported petroleum to refineries. The estimated average daily production of the entire country last week was 2,096,179 barrels, or only 60,598 barrels a day more than the average consumption during October. From present indications, the average daily production of this present week probably will be about on a par with the average daily consumption during October.

Consumption is holding up better this winter than it ever did in the history of the industry. It is showing steady and material increases over similar previous periods. Those in close touch with developments in the industry affecting a wider use of petroleum products, the steady increase in the number of automobiles and the greater use of automobiles all the year round, are assured the demand for petroleum products will surpass all records with the beginning of next spring when the period of maximum consumption opens. Declining production and an increase in demand means but one thing—prosperity, and oil men are beginning to prepare their business to take advantage of this period which they expect to start soon after the first of the year.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended December 1, and a comparison with the previous week follows:

Field	Dec. 1	Nov. 24
Oklahoma—Northern Fields:		
Tonkawa	47,783	47,480
Burbank	83,670	86,136
Other Osage Fields	28,075	28,115
Cushing and Shamrock	24,415	24,395
Bristow and Eastern Bristow	47,305	47,325
Northern Miscellaneous	86,120	85,915
Southern Fields:		
Healdton	17,315	17,305
Hewitt	21,310	21,175
Southern Miscellaneous	24,960	24,920
Total Oklahoma	380,953	382,766
North Louisiana	56,890	57,730
Arkansas—		
El Dorado	11,525	11,645
Smackover Light	17,730	19,890
Smackover Heavy	80,400	79,900
Other Arkansas Fields	10,305	10,580
Total Arkansas	119,960	122,015
North Central Texas	115,475	112,255
East Central Texas (Mexia, Currie, Corsicana, Powell)	240,506	308,715
Kansas	71,050	71,080
Total Mid-Continent Area	984,834	1,054,561
Gulf Coast	95,277	94,898
Eastern	110,200	109,400
Wyoming-Montana	157,868	155,475
California—		
Santa Fe Springs	210,000	216,000
Long Beach	235,000	240,000
Huntington Beach	71,500	72,000
Torrance	33,000	30,500
Remainder State	198,500	199,000
Total California	748,000	757,500
Total United States	2,096,179	2,171,834

Decrease, 75,655 Barrels

Record Decrease at Powell

It is not believed the history of the industry records a more rapid decline in production than that established by the Powell Field during the past three weeks. The field reached its peak November 13, when its output for that day amounted to 354,893 barrels. All wells were opened up then and the field began to decline quickly, the average output for the week being 325,000 barrels. Production continued to fall and the average for the week ending November 24 was 264,000 barrels. Beginning Sunday, November 25, the daily output of the field last week was as follows: Sunday, 233,168; Monday, 222,110; Tuesday, 211,260; Wednesday, 208,300; Thursday, 171,172; Friday, 168,415 and Saturday, 156,250. Another drop of 20,000 barrels was recorded Sunday of this week when the output was 136,500 barrels.

This record fall in production was registered during the week when 33 wells were completed, 26 of them being flowing oil producers with an initial production of 27,734 barrels. Many of the wells at Powell have stopped flowing and will be put on the pump.

The Situation in Other Fields

California continued its slow decline during the past week, production there dropping 9,500 barrels daily. Torrance registered another increase but it amounted to only 2,500 barrels daily. Each of the flush fields in the Los Angeles district showed a decline, Santa Fe Springs dropping 6,000 barrels daily, Long Beach 5,000 barrels and Huntington Beach 500 barrels. Oklahoma showed another decline due chiefly to the continued drop in output of the Burbank Field. Other fields of the country are maintaining their production, slight increases or decreases in one week usually being offset during the following period.

There were not any changes in the posted prices of crude in any of the fields of the country during the past week. Operators do not expect any general changes in the posted prices to materialize until after the first of the year. It is felt these changes will be made when the larger companies begin to draw upon their crude stocks.

The heads of a number of the large companies are urging producers to proceed with caution in their drilling campaigns, fearing that any intensive effort right at this time may postpone the coming of complete prosperity for the industry. These companies are getting ready to buy and handle large amounts of crude in the near future but they are sounding a note of warning against any sudden "boom" in drilling activities. The best course for the industry to assume at this time, it would seem, would be for a gradual increase in activity which would prevent any sudden or great increase in production and permit the full benefit of the decline now being experienced to be felt throughout the oil business.

Table of Contents on following page.

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly at 114-116 West Second Street, Tulsa, Oklahoma, by

THE PETROLEUM PUBLISHING CO.

TABLE OF CONTENTS

Output Drops 163,849 Barrels in Two Weeks ---- 17
By Andrew M. Rowley
Production of crude declined 75,655 barrels last week. Big slump at Powell continuing. California lower.

A Venerable Relic of the Oil Industry ---- 19
By Frank T. Louinger
Still used by Samuel M. Kier of Pittsburgh for the first refining of "carbon oil" is yet performing daily service.

Doheny Defends Teapot Dome Lease ---- 19
By Charles E. Kern

Institute to Consider Wider Use of Oil ---- 20
By James McIntyre
Standardization of drilling equipment also important topic at convention next week.

Institute Has Big Function to Perform ---- 21
By N. O. Fanning
Work of special committees important at this time. Organized during World War.

Looking to St. Louis (Editorial) ---- 24
The American Petroleum Institute should provide for a representative leadership that will continue to function aggressively in behalf of the industry the year round.

Better House Heaters Create Oil Market ---- 28
By Ralph T. Baker
Three types of installation for various sizes of buildings.

When the Operator Again Hears the Call ---- 34
By L. G. E. Bignell
Will wells which have been shut in show as much production as formerly?

"Touch" Important in Pole Tool "Fishing" ---- 36
By Albert Millar
Graphic description of operation followed in Galician and Canadian oil fields.

Initial Production at Powell Declines ---- 38
Flush output of wells completed east of California in November greater than during October.

Men Known in Oildom and Personals ---- 72
Pertinent facts about men who are active in the industry.

Texas Production Shows Large Decrease ---- 102
Gross output of third quarter 2,000,000 barrels less than during second period.

Refining and Marketing

Little Change In Group 3 Market ---- 22
By C. O. Willson
Gasoline prices firm despite slow movement. Fuel oil strong with indications of an advancing market.

Mid-Continent Refinery Runs Increase ---- 23
By C. O. Willson
Show 18,640 barrels December 1 over November, only 37,091 less than last year.

Oil Securities Hold Recent Advances ---- 26
By N. O. Fanning
Great improvement in the petroleum situation but leaders are cautious about making predictions for 1924.

Crude and Refined Oil Prices ---- 30-31

Tank Wagon Quotations ---- 32

W. P. R. Association's Refinery Check ---- 32

Refining and Marketing Briefs ---- 82
Stories of special interest to persons engaged in the refining and marketing of petroleum.

Government's Tests With Floating Roof ---- 84
By Ludwig Schmidt
Evaporation reduced by eliminating vapor space above oil while fire hazard greatly lessened.

Kerosene Strongest Feature in East ---- 86
By N. O. Fanning

Chicago Market Still Optimistic ---- 88
By Ralph T. Baker
Upward trend of prices shows lull as jobbers endeavor to hold down inventories.

Field Operations

Wyoming ---- 40
By F. B. Taylor
Salt Creek producers agree to 100 per cent production. Test shows output down to 130,000 barrels.

Canada ---- 40
By Victor Lauriston
Completion in southern Alberta starts with 8,000,000-foot flow of natural gas.

Oklahoma ---- 42
By C. D. Lockwood
Operations proceeding cautiously with drilling campaign. Mounds district well starts at 4,800 barrels.

North Central Texas ---- 44
By Dan F. Dugan
Drilling development proceeding slowly although production increased during week.

East Central Texas ---- 46
Powell Field averaged 195,811 barrels daily with slump continuing.

Kansas ---- 46
By C. D. Lockwood
Operators not as yet showing any signs of becoming more active.

Gulf Coast ---- 48
By P. L. McGreal
Houston Oil Co. gets 50,000,000-foot gasser in Live Oak County.

Mexico ---- 48
By George Blardone
Rich Mex Oil Co. completes 15,000-barrel producer in Cacalilao sector at Panuco.

California ---- 50
By L. P. Stockman
Oak Ridge Oil Comany's wildcat near Bandini reports oil sand which may be new oil territory.

Central West ---- 52
By Whit
Considerable activity in Richland-Huron natural gas field.

North Louisiana-Arkansas ---- 54
By M. L. Vaughn
Production again declines, most districts showing decreases in output.

West Kentucky-Tennessee ---- 56
By Vern T. Whitney
Paragon Development Company opens new pipe line.

Pennsylvania-West Virginia ---- 56
By D. S. Wakenight
Well making 50 barrels completed in what was considered only gas territory.

Miscellaneous

Natural Gas Developments ---- 60
Stories of special interest to men and companies engaged in natural gas industry.

Equipment and Supplies ---- 62
Buying of steel experiencing period of seasonal quietude.

Crude Petroleum Statistics for October ---- 74

Application of Oxy-Acetylene Welding ---- 78

Russia's Oil Policy Attracting Attention ---- 116

Paleontology Employed to Delimit Domes ---- 121

Crude Petroleum Statistics ---- 136

A Venerable Relic of the Oil Industry

Still Used by Samuel M. Kier of Pittsburgh for the First Refining of "Carbon Oil" is Yet Performing Daily Service

By Frank T. Lauinger

It is generally conceded that petroleum was first refined for commerce in Pittsburgh, Pa., by Samuel M. Kier, and its single product, kerosene, placed on the market several years before the drilling of the original discovery well on Oil Creek by Col. Edwin L. Drake in 1859. The scene of Mr. Kier's modest operations was located on Seventh Avenue, just east of Grant Street at the intersection of the old Pennsylvania Canal.

Among many other enterprises he was interested in the manufacture of salt, obtained from the brine pumped from drilled salt wells near Tarentum, Pa., on the banks of the Allegheny River about 20 miles north of Pittsburgh. The salt water issuing from some of these wells became polluted with a dark, greasy ill-smelling fluid known as "Seneca oil," or "rock oil," which caused much annoyance in the salt making process. Young Kier, who was endowed with an active mind, reasoned that this fluid possessed some hidden commercial properties. Guided by this conviction he took a sample of the liquid with him on a trip over the old canal to Philadelphia about the year 1849, where he submitted it to Prof. J. C. Booth for analysis. After a careful examination the chemist reported that it might prove useful as a solvent for gutta percha, but following a trial for this purpose by a company in New York it was pronounced a failure. Professor Booth, however, was convinced that an excellent lighting oil could be produced from the substance, and furnished Mr. Kier with drawings for a suitable still for its extraction.

"Carbon Oil" Burner

Kier returned to Pittsburgh, where he had a cast iron still of 1-bbl. capacity constructed for experimental purposes. The results obtained following many trials fully demonstrated to him the feasibility of refining the crude oil for commercial uses. After devising an ingenius burner suitable for using his new illuminant which he termed "carbon oil," he entered into competition on a small scale with the more expensive "coal oil" which had been rapidly coming into popular use for illluminating purposes. Being satisfied that his experiments had proven entirely successful, he determined seriously to go into the refining of petroleum on a commercial scale, and about the year 1854 he had constructed of wrought-iron a 5-bbl. still, the original of which is shown in the photographs accompanying this article. The still was set up and put into active operation in the year 1855, establishing the world's first petroleum refinery.

The young pioneer's supply of crude oil was necessarily contracted, being limited to what he could obtain from his own and a few neighboring salt wells. About the time he had fairly launched his little enterprise, unconsciously blazing the way for one of America's greatest industries, the Drake well was discovered, and as a result of the great deluge of oil and opposition he gave up the field of oil refining and returned once more to his original pursuits. He did not take out any patents on his process of refining or on the very excellent burner which he invented for use in oil lamps. Those who knew him best said that his mind was more on accomplishment than on the accumulation of wealth.

Had Famous Associates

Mr. Kier's main business was transportation. He was the chief owner of a line of canal boats operating between Pittsburgh and Philadelphia, with a branch extending from Harve de Grace, Maryland, to Baltimore. Associated with him in this enterprise were James Buchanan, later elected president of the United States, and Benjamin F. Jones, who subsequently became the founder and head of the great Jones & Laughlin's Steel and Iron Mills in Pittsburgh. Jones secured his first employment with Mr. Kier in the offices of the "Mechanics Line" of canal boats, later becoming manager of the company, then a partner, and finally severing his connection to embark in the manufacture of iron and steel.

The Encyclopedia Brittanica, Eleventh edition, in its article on Petroleum reads as follows:

"Crude petroleum was experimentally distilled in the United States in 1833, by Professor Silliman (d1864) and the refining of petroleum in that country may be said to date from about the year 1855, when Samuel M. Kier fitted up a small refinery with a 5-bbl. still for the treatment of the oil obtained from his father's salt wells. At this period the supply of raw material was insufficient to admit of any important development in the industry, and before the drilling of artesian wells for petroleum was initiated by Drake, the 'coal oil' or 'shale oil' industry had assumed considerable proportions in the United States.

"* * * In the earlier refineries, the stills, the capacity of which varied from 25 to 80 bbls., usually consisted of a vertical cylinder constructed of cast iron or wrought iron, with a boilerplate bottom and a cast iron dome, on which the 'goose neck' was bolted. * * * The charge was distilled to almost dryness, though the operation was not carried far enough for the residue to 'coke.' The operation was, however, completely revolutionized in the United States by the introduction of the 'cracking process,' etc."

Old Still Yet in Service

The writer by chance recently learned from Samuel M. Kier, president of the Kier Fire Brick Co., in Pittsburgh,, a grandson of the pioneer refiner, of the existence of the old still. As the photographs which were taken just a few weeks ago reveal, it is still performing daily service, being used in the capacity of a separator at a gas well near the works of the fire brick company at Salina, Pa., about 30 miles distant from the old salt wells. Its long exposure to the elements and at the same time being subjected to daily use, is a strong attestation to the quality of the iron used in its construction. It is indeed a venerable relic of the petroleum industry.

DOHENY DEFENDS TEAPOT LEASE BEFORE SENATE INVESTIGATORS

By C. E. Kern

WASHINGTON, D. C., Dec. 4.—Edward Lawrence Doheny, of the Pan-American Oil Co., as a witness before the Senate Committee on Public Lands, defends the contract made by Secretary Fall with Harry F. Sinclair for the drilling of Teapot Dome. Mr. Doheny read his testimony given six years ago before the small committee in respect to the need of offset wells in Naval Oil Reserves Nos. 1 and 2 and said the need for prompt removal of oil from a field after drilling has been begun was proved in those reserves.

Failure to proceed with development of the national petroleum reserves would have cost the Navy 225,000,000 barrels of oil through drainage and otherwise, Mr. Doheny told the committee.

Indorsing the leasing of the reserves being investigated by the committee, all of which are in the Teapot Dome Field, Mr. Doheny said the "policy pursued under Secretary Daniels" resulted in the loss of at least 100,000,000 barrels.

Senator Walsh, Montana, called attention to a report of the Bureau of Mines fixing the loss of the Navy at 11,000,000 barrels, of which only 5,000,000 was said to have been sustained since the passage of the leasing act, and asked whether the bureau had the same information available to the witness.

"No, sir," said Mr. Doheny, "no man living has that same information on the subject that I have."

The Pan-American Petroleum Co., of which he is head, already has $14,000,000 invested under its lease of Reserve No. 1

(Continued on Page 114)

Samuel M. Kier and two views of first still used in refining oil. It was 4 feet 8 inches in height; diameter, 3 feet 7½ inches, and circumference, 11 feet 11½ inches

Institute to Consider Wider Use of Oil

Standardization of Drilling Methods and Equipment Also an Important Topic at Convention in St. Louis Next Week

By James McIntyre

The utilization of petroleum and its products, especially the advancement of an industrial program for the more extended use of fuel oil, will be one of the two most important features of this year's sessions of the American Petroleum Institute, which will be held in the Statler Hotel in St. Louis, Mo., on December 11, 12 and 13. The other big feature of the program will be standardization, simplification and improvement in oil drilling methods and equipment. These subjects occupy more space on the Institute program than any other, and will be presented by some of the leading men in the industry.

In the field of fuel oil the Institute, for the first time, will take up the subject of the heating of houses with oil, and the Institute invites thorough discussion of this big topic and recommendations as to how proper cooperative relationship shall be created between the oil burner and the oil industry.

Automotive fuel and lubrication, which held an important place on last year's porgram will not be slighted this year and several important papers on both subjects and the relationship between the automotive and the oil industries will be presented and open for discussion.

Thomas J. O'Donnell, of Los Angeles, Cal., who has been president of the Institute since its beginning, will deliver his annual address at the opening general session on Tuesday afternoon, in which he is expected to review the work of the past year and discuss the problems which confront the industry.

Other Noted Speakers

On Tuesday's program E. T. Meredith, publisher of "Successful Farming," and former Secretary of Agriculture, will speak on "Agriculture, the Farm and its Relations to the Oil Industry;" Paul Shoup, president of the Pacific Oil Co., will present the important subject of "The Oil Industry and the Public."

On Wednesday, "The Protection of the Good Will of the Oil Industry," will be in the hands of Lou E. Holland, president of the Associated Advertising Clubs of the World, and at the same session Edward Prizer, president of the Vacuum Oil Co., will speak on "Things Abroad."

L. V. Nicholas, president of the National Petroleum Marketers Association, is on the program Thursday for an address on "The Need for Harmonious Industrial Relations." At the same session George N. Moore, president of the Western Petroleum Refiners Association, will speak on "The Refiners' Problem in 1923," and E. W. Marland, preisdent of the Marland Oil Co., will address the Institute on "The Hazards of Finding and Producing Crude Oil."

The banquet on Thursday evening will be followed by addresses by C. F. Kettering, research engineer, General Motors Corp.; Julius H. Barnes, president of the Chamber of Commerce of the United States, and A. C. Bedford, chairman of the board of directors, Standard Oil Co. of New Jersey.

Fuel Oil Prominent Subject

Fuel oil and its uses will be one of the most important subjects to be taken up at this year's meeting. On the opening day Henry L. Doherty, president of Henry L. Doherty & Co., will speak on "The Utilization of Petroleum Products." On Wednesday morning, J. M. Johnston, fuel agent of the M. K. & T. Railroad, will discuss "The Burning of Fuel Oil in Railroad Locomotives." At one of the afternoon group sessions on Wednesday, Edward P Bailey, representing the American Association of Oil Burner Manufacturers, will handle the very timely topic of "Heating Houses With Oil" J. Parker B. Fiske, president of the New England Oil Heating Association, and Guy I. Sweeney, president of the Sweeney Gasoline & Oil Co., will speak on "What the Oil Burner and Oil Industries Can Do for Each Other." A speaker to be announced will discuss "The Use and Value of Oil Under Boilers and in Diesel Engines for Ship Propulsion."

The enormous increase in the production of crude petroleum this year—a production that came so quickly and unexpectedly that it could not be absorbed by the ordinary methods of consumption,

THOMAS A. O'DONNELL
President

prompted economists to call the industry's attention to the almost limitless field of fuel oil burning in houses. Oil has been used for fuel for many years and scientists and engineers have, by the invention and installation of efficient burning devices steadily increased its use. It has become the successor of coal in many manufacturing industries and in the heating of large buildings and threatens to displace coal altogether in the naval and merchant marine service. But the industry continued to overlook the American householder until its attention was persistently called this year to the possibilities of a great market if the burning of oil in the houses could be made foolproof by the invention of easily operated and consistently efficient oil burners. The Institute was quick to see the wisdom of the idea and it is worthy of notice that papers dealing with the subject of household oil burning and cooperation between the oil and the oil burner industries were made a part of the fuel oil division of the program.

Unlooked For Overproduction

In the 12 months that will elapse between the 1922 session of the Institute and that of 1923, America will have produced approximately 700,000,000 bbls. of crude. This is over 330,000,000 bbls. in excess of the production of the 12 months before, a surplus altogether unlooked for when the Institute met last year, at which time the sentiment was that the year 1923 would see a shortage of oil.

The only note of warning sounded at the Institute sessions last December was in the extemporaneous address of President Tom O'Donnell at the banquent on the closing night, when he sketchily reviewed the development of the three new California fields, Santa Fe Springs, Long Beach and Huntington Beach, which had, up to that time, been responsible for increasing California's production from 325,000 barrels a day to 497,000 barrels a day in the 12 previous months. Mr. O'Donnell, while making it plain that California's production was on the ascendency, and that it was a factor to be reckoned with, gave no hint of the enormous production the State would develop this year. California has produced about 256,000,000 barrels of oil in the past 12 months, which is 117,000,000 barrels in excess of its production in the previous 12 months.

In addition to those in California, big fields were developed in Arkansas and Texas, while the production of Oklahoma and Wyoming was greatly increased over previous year. The usual outlets for oil and its products were insufficient to get rid of the over production and a lower scale of prices for crude and refined resulted. All this would have been prevented had the oil burner manufacturer

HARRY F. SINCLAIR
Treasurer

and the oil producer and refiner been ready to provide the combination of household and burner fuel. As there is no assurance that the United States will not again have a period of big production from fields as yet unexplored, the wisdom of preparing for a market for the excess product has been appreciated and the Institute will do its share in developing a state of preparedness.

Advancing Standardization

In the field of production the important subject of standardization, simplification and improvement in drilling methods and equipment will be divided into several parts. The standardization of boilers, rotary tool joints, rotary drilling equipment, cable tools, rig irons, wire rope and Manila cables, belting, size of derricks and specifications for steel and iron pipe for oil country tubular goods will be treated separately. Reports of committees appointed at last year's meeting will be presented, discussed and passed upon.

The subject of standardization, or as some prefer to call it, simplification, has been taken very seriously by the oil and gas industry in the past two years. Manufacturers, as well as the men who buy and use fuel oil supplies, have given constructive thought to the subject. Notwithstanding that American oil fields are far apart, extending with considerable distances between them from the Appalachians to the Pacific Ocean and from the Canadian line to the Gulf of Mexico, the various committees appointed by the Institute last year have taken time to get together and seriously consider the problems involved in the fight against the manufacture and use of nonessentials and needless duplications, and it is expected that at next week's session each of the committees will have a report that will meet with the approval of the Institute membership and result in economies that will be appreciated by the manufacturer and oil fraternity alike.

In the production section of the program a study of oil field working conditions will be presented by F. B. Foley of the United States Bureau of Mines. "The Use of Electricity in the Oil Fields" will be treated by W. G. Taylor, engineer, of the power, mining and engineering department of the General Electric Co.

The transportation of oil will come in for consideration and three papers are on the program dealing with this subject. D. S. Bushnell, president of the Buckeye Pipe Line Co., will speak on "The Problems of Transportation of Oil." A speaker to be announced will address the Institute on "Oil Marine Transportation," while Col. B. W. Dunn, chief inspector of the Bureau of Explosives, will

ROBERT L. WELCH
Secretary and Counsel

talk on "Cooperatively Developing Regulations for the Safe Transportation of Petroleum Production by Railroad."

Gasoline and Good Roads

The allied subjects of good roads and automotive fuel and lubrication are in good hands. On Wednesday, J. E. Pennybacker, secretary the Asphalt Association, will speak on "The Use of Petroleum and Its Products for Road Construction." "The Fuel Problem From the Standpoint of the Automotive Industry" will be presented by a speaker yet to be announced. Dr. G. K. Burgess, director of the United States Bureau of Standards, will handle the topic, "What Is Good Gasoline?" in the course of which

(Continued on Page 108)

Institute Has Big Function to Perform

Work of Special Committees Especially Important at This Time. Organized to Aid Government During World War

By N. O. Fanning

NEW YORK, Dec. 3.—The American Petroleum Institute will hold its fourth annual meeting in St. Louis on December 11, 12 and 13. In the four years of its existence, the institute has fairly gained a solid place in the petroleum industry such as its founders, representing the industry themselves, had hoped for.

Before speaking of the many ac-

R. D. BENSON
Vice President

complishments which the American Petroleum Institute can boast, it is worth while pointing out how young the organization is in comparison with the oil industry itself. Its four years of existence contrast with the industry's 64; and when this is pondered over, it seems that the oil industry went a very long time without some national organization of the kind. One of the two leading industries of the United States, it has grown to produce more than $3,000,000,000 worth of products annually, and these products find their way into every branch of civilized human endeavor.

It may well be asked how it could be that no such organization as the American Petroleum Institute had been formed prior to 1920. The answer is that man does many things only when something occurs to force him to do it, or in other words, when he feels that he has to do it. It was only when the Allies faced a possible defeat in the World War and it was found that something must be done at once in the United States to hasten supplies of fuel to the fighting area, that an organization was formed to take care of the petroleum end of it, which is really the beginning of the American Petroleum Institute. This organization was called the National Petroleum War Service Committee.

It was not until that experience, and the World War had come to a victorious end, that the American oil industry really knew itself as the giant it was. The feeling that even in time of peace there must be some medium to keep the various elements in the industry in accord on matters of common interest and to take in the loose strings, as it were, resulted in the formation of a permanent organization, the American Petroleum Institute.

If any criticism can be made of the work of the institute it must be because it found such a gigantic task on its hands at the very beginning. The many and diverse tasks which even now confront the institute illustrate not only the importance of its work, but the need for such an organization in an industry of this size.

Much of the work is accomplished through committees. A standardization committee passes upon recommendations for standardization, simplification and improvement in oil field equipment and method, and such standards or specifications as may be adopted for the guidance of manufacturers bear the label "A. P. I."

A general committee on railroad transportation, with numerous subcommittees, considers and determines the multitudinous problems which are constantly aris-

J. W. VAN DYKE
Vice President

ing in relation to the handling and transporting of oil products by rail in tank cars. Special committees are appointed from time to time to handle specific problems which extend beyond the particular scope of the general committee. There is a Foreign Relations Committee which has as its duty consideration and the offering of recommendations related to important international problems affecting oil.

The Institute maintains special departments for effective cooperation with the Government and to give advice to the industry when called upon in matters referring to Federal taxation and the application of regulations of the Bureau of Internal Revenue; also for the assembling and dissemination of statistics which will be of service to every branch of the oil industry.

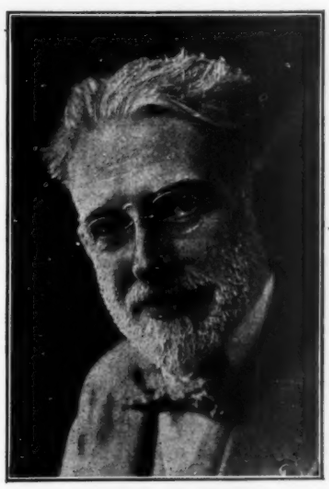
Work of Special Committees

In addition to the committees named there are many special committees dealing with special subjects. Among them is a Committee on Fire Prevention and Protection of Life and Property, dealing with fire regulations and the agencies which develop and recommend such regulations. There are also the following: A special committee handles experimenta having to do with the quality of motor fuel; a special committee cooperates in the making of Government specifications for petroleum products; a special committee has been cooperating in research work to determine the toxicity of gases from oils containing a high sulphur content; a special committee considered the causes and remedies for the pollution of navigable waters in the United States in connection with proposed legislation in Congress; a special committee considered methods of testing materials; another special committee is considering a proposed code for lightning protection.

The American Petroleum Institute also makes it its business to keep in touch and maintain a "cooperative relationship" with associations which, in their operations, come in contact with the oil business. Among these associations are the Society of Automotive Engineers, the National Automobile Chamber of Commerce, the American Institute of Mining and Metallurgical Engineers, the Mining and Metallurgical Society of America, the American Steamship Owners' Association, the American Gas Association, the American Society for Testing Materials, the American Society for Mechanical Engineers, the American Engineering Standards Committee, the American Institute of Electrical Engineers, the National Research Council and the National Industrial Conference Board.

Control of Output

Recently considerable space was de voted to the formation of a committee of the American Petroleum Institute mem-



HENRY L. DOHERTY
Vice President

bership to study the question of control of crude oil production in collaboration with representatives of the Department of Commerce. This action is stressed here because it represents one of the most important in the history of the Institute. The question of control of production is admittedly one of the most essential and yet most perplexing which this great industry has had to meet. Furthermore, it affects every branch of the business from the biggest oil man down to the owner of an acre lease. It has the physical and legal sides, and in the latter respect represents a problem which, of course, has to be handled with the greatest delicacy and deliberation.

If the work of this particular American Petroleum Institute committee leads to a solution of the problem, it alone will more than justify the existence of such an organization.

Just what progress has been made so far by the committee is not known, but some announcement is expected to be made at the forthcoming annual meeting of the Institute, which becomes even more important for that reason. It is expected to be one of the features of the convention.

The purpose of the Institute was declared by Robert L. Welch, its secretary and general counsel, before the Senate subcommittee investigating the price of oil, early this year, as that of:

(a) Affording a means of cooperation with the Government in all matters of National concern.

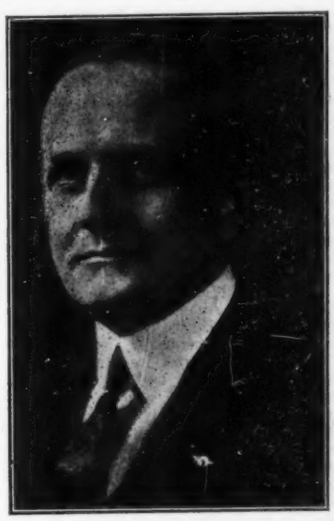
(b) Fostering foreign and domestic trade in American petroleum products.

(c) Promoting in general the interests of the petroleum industry in all its branches; and

(d) Promoting the mutual improvement of its members and the study of science connected with the petroleum industry.

Mr. Welch stated further: "It is a National organization of oil men, embracing all branches of the petroleum industry. The membership is individual and on July 26, 1922, numbered 2,036. According to classification by membership, 688 were engaged in production, 509 in manufacture, 519 in distribution, 366 in transportation, 153 in natural gas, 154 in foreign trade, 95 in supply—that is, supplies for operating in the fields; 70 are petroleum engineers, 53 are scientists, 154 classify themselves under miscellaneous headings, and 504 are unclassified.

"Of the total membership, 520 are connected with the so-called Standard Oil companies; 1,516 are connected with what are called the independents; approximately 850 companies, firms and corporations are through these individual



W. R. BOYD, JR.
Assistant Secretary and Counsel

members identified directly or indirectly with the Institute.

"Geographically, 406 members reside in New York, 321 in Pennsylvania, 286 in California, 178 in Texas, 106 in Illinois, 171 in Oklahoma, 131 in Ohio, 62 in Colorado, 49 in Kansas, 31 in West Virginia. 27 in Louisiana, 23 in Kentucky, and scattering representation throughout the United States."

Little Change in Group 3 Market

Gasoline Prices Firm Despite Slow Movement. Fuel Oil Strong With Indications of an Advancing Market

By C. O. Willson

The Group 3 refined market during the past week failed to develop any features of special interest. The improved tone in the market noted in these columns last week continued only in the sense that refiners generally were able to maintain firm prices on practically all products. The further advance in New Navy and some of the higher gravity gasolines expected by some did not materialize. A few refiners advanced their New Navy prices ¼ to ½ cent, but where these prices are in excess of 6¾ cents the effect has been largely to remove these concerns from the spot market.

The actual movement of gasolines deserves the designation of "sluggish." While the refiners are endeavoring to advance their prices the buyers do not seem unduly alarmed as to an advancing market and are taking their time in accepting the new prices. It is now apparent that despite the generally improved situation in the oil industry, which has as its basis the rapid decline in crude production, no runaway refined markets are to result.

Fuel Oil "Tight"

Perhaps the most significant development of the past week so far as Group 3 is concerned lay in the fuel oil market. In the language of the buyer it is "tight." Prices have not advanced, but the present quotations, which have prevailed for several weeks are firmer and there is not the buying under the market there has been in the past. The immediate cause of this situation in Group 3 lies in the spot market purchases of the past week or 10 days. The Frisco Railroad, in addition to its contract purchases, is reported to have bought about all the spot fuel oil available on its lines and other lines have also bought outside their contracts. In addition to these purchases, it is known that many refiners have received an exceptionally large number of inquiries from industrial buyers in the Middle West and East in sufficient numbers to indicate that the major buyers generally are in the market.

The situation, which has largely developed during the past week, has led some observers to speculate whether fundamental conditions as to supply and demand affecting this product have not changed recently, with a strong market and higher prices to follow for the winter months. The actual purchases of the past week and the prospective buying in this group certainly tend to sustain this belief and reports from other refining areas are also convincing.

The fuel oil market has had no real strength since June. At that time stocks for the United States began to increase, due largely to the heavy production of California crude with its large fuel oil content. The consumption during the past six months has been irregular, as gauged by the monthly reports of the Bureau of Mines, but considered for the six months' period, it has shown a substantial increase over the same period for last year. Great as this consumption has been, the supply was even greater and the stocks the last of September, the latest available from the Bureau of Mines, totaled approximately 1,480,000,000 gallons. As was to be expected in the face of this situation, the price trend has been downward.

Strengthened by Crude Drop

But it has been generally agreed that, with a heavy consumption assured, all that was needed to strengthen the market was a comparatively slight falling off in production. Refinery runs decreased in September, according to the Bureau of Mines, and reports not so complete since that time, have indicated that refiners were reducing their output, due to the low gasoline prices.

As is commonly known, California production, from which in the summer months approximately 50 per cent of the fuel oil came, is steadily declining. The significance of this decline so far as fuel oil is concerned, is apparent. The October report of the Bureau of Mines, which will be available in a few days, should throw some light on the present supply and demand situation, although it is probable that the real improvement, if it has developed, occurred in November.

The strength shown in feul oil in Group 3 is general for the Mid-Continent area. The North Texas market is now on a par with Group 3. It is a much mooted question in marketing circles whether comparatively high fuel oil is a blessing or a curse to the average refiner. It is contended that prices higher than those now prevailing at present crude prices would encourage refiners to increase their runs to stills, thus increasing the gasoline output certainly not needed at this time. There is the further fact that the bulk of fuel oil is disposed of through marginal contracts based on the price of crude, thus making it impossible for many plants to benefit from advances in the spot market. Nevertheless, a majority of the refiners in this group would welcome higher fuel oil prices. The next few days should indicate whether the spot market is to witness a substantial advance in fuel oil in this area.

Gasolines and Naphtha

As previously explained buyers and sellers have different opinions as to what constitutes the market on gasolines. Refiners selling direct to their regular jobbing customers state they are moving their usual amounts at the new prices. But the movement of resale material is slow. Marketers generally are refusing to pay 6½ cents for New Navy. A few refiners are willing to sell at 6½ cents but others are asking 6¾ and 7 cents. It is known several of the marketers in November bought up a considerable quantity of New Navy over December at 6¼ cents and while they would take material at that figure they are not pressed in their deliveries and will not be at least until after the 15th of the month. Refiners, on the other hand, have empty storage and believing that further advances are assured are generally firm in their quotations. It is apparent that the next few days will determine whether the buyer or the seller's position is the more secure.

Marginal Contracts

Another factor which tends to hold back any advance in the New Navy market lies in the marginal contracts. Past experience has shown the difficulty of advancing a spot market when the marginal contract basis is from 2 to 2½ cents lower. With 4 to 5-cent gasoline available at the present time under these marginal contracts, shipments have been as large as the refiners having the contracts with the jobbers will permit. Refiners state they have been having complaints from jobbers who buy on the spot market to the effect that they cannot compete with other jobbers having these marginal contracts covering the whole or part of their requirements. There is nothing new about this situation as it has always been apparent when a similar relation between the spot market and the marginal contracts existed. As a logical development jobbers buying on the spot market are seeking marginal contracts. Many of the trade believe that this market situation will continue for many months and refiners for that reason are not adding to their marginal contract obligations.

Refiners have in the Mid-Continent area been aided in maintaining firm gasoline prices by outside competition. It is known that the Mexican Petroleum Co. and other refiners of the South Louisiana area are quoting prices in line with those of Group 3, with little material to offer until after the first of the year. These concerns during the past summer have on several occasions forced lower prices in the Mid-Continent by their direct competition in the middle west consuming areas. The Roxana Petroleum Corp. has also advanced its spot market prices on New Navy.

There was little change in the higher gravity gasolines. The new buying of the past week in Group 3 was confined to domestic movement. The market situation is largely the same as that of New Navy. Buyers are slow in accepting the prices of the refiners.

Natural Gasolines

There has been no improvement in the natural gasolines. The market is still weak and prices are from ¼ to ½-cent lower than last week. For periods of a day or two the market has, on several occasions, given indications of firmness but these are followed with selling at new low levels. Major manufacturers are optimistic as to the price trend after the first of the year. It is believed buying will increase then with the surplus to be run to storage.

Kerosene and Distillate

There have been no general changes in kerosene prices in Group 3. Prices have advanced in practically all adjoining areas and it has been freely predicted that Group 3 prices will be advanced another ¼-cent by the end of the week. There has been some export buying with an increase in the number of inquiries from domestic buyers. The Standard of New Jersey purchased additional material for export. The Texas Co. has also placed some export business. One concern is reported to have purchased approximately 200 cars for domestic shipment over the balance of the month. The large orders for the 41-43 water white grade were purchased around 4½ cents. The sales direct to the jobbing trade for this grade are now generally 4¾ cents.

This steady demand is taking all the material available. Buyers who cover the entire Mid-Continent area state a large number of plants are sold up over the balance of the month and are refusing to quote on January business. It is known several of the large buyers are still seeking more kerosene and it is probable they will continue to pick up the little available for shipment over the rest of the month.

The distillate situation is unchanged. The movement of distillates generally has been disappointing. Due to the wide publicity given the use of distillates for home burning many were anticipating a large increase in demand. Refiners are in a position to limit their output to meet the demand, however, and price concessions have not been necessary.

Fuel and Gas Oils

The market situation in regard to fuel has been previousy explained. The improvement has been reflected in the gas oil market, although there have been no general price changes. One buyer who canvassed the situation in this group during the past week, stated he was unable to buy any gas oil at 2¼ cents. He said he found very little material available at any price.

REFINED MARKET BAROMETER

Although refined market prices throughout the United States were generally firm during the past week market developments were not uniform in all areas. The further tightening of the crude market was reflected in a continued tendency on the part of refiners to refuse further price concessions but in some areas reductions have been necessary to move what is apparently distress material. Gasoline prices were generally firm with lower prices, however, in Pennsylvania. Gasoline movement was fair. Fuel oil was strong except in Pennsylvania, where lower prices prevail due to a slump in demand. Kerosene was strong in practically all areas with higher prices where there were any changes. Natural gasolines soft. Fair demand for neutrals with no important price changes.

Mid-Continent—Strength of fuel oil featured the market. Prices advanced in some areas with no change in others. Believed that situation in regard to fuel oil supply and demand may bring a general price advance. Gasoline prices generally firm with only fair movement reported. Little gasoline available in Arkansas and prices were advanced. Kerosene continued strong with higher prices in all areas with the exception of Group 3. Natural gasoline weak with lower prices. Fair to strong demand for distillates with no important price changes. Good movement of neutrals with no price changes.

Atlantic Seaboard—Apparent shortage of kerosene believed to be due to the increased demand for furnace oil, which has reduced the stocks of low grade kerosenes. Kerosene export demand strong. Gasoline unsettled but it is not believed that prices will go lower. Bunker oil market uncertain with many believing that increased shipment of Mexican crude will bring further price reductions. Due to increased cost of cases export kerosene and gasoline in cases advanced ¼ cent. Generally more optimistic tone in marketing circles.

Chicago—Temporary lull explained as being partially due to desire of jobbers to hold down inventories for December 31 tax reports. Improved tone in gasoline markets continue with no further price advances. Some New Navy orders placed over the balance of the month at 6¾ cents. Good demand for kerosene and prices are firm. Distillate demand not up to expectations due to the unfavorable weather. Natural gasolines weak and prices have been reduced slightly. Other products unchanged. Fuel oil strong.

Pennsylvania—Fuel oil weak with prices on all grades lower. Kerosene demand not so strong as last week with prices unchanged. Gasolines soft and prices are lower on straight run, blends and natural gasolines. Distinct falling off in gasoline demand at the refineries. Demand for cylinder stocks exceptionally strong with several large buyers in the market. Wax scarce with little available for spot shipment.

Gulf Coast—Indications that zero cold test lubricants will sell at present prices over winter regardless of advances in Gulf Coast crudes which are expected shortly after the first of the year. Refiners generally sold up over December at prices in line with present spot prices. Refiners operating near capacity.

Mid-Continent Refinery Runs Increase

Show 18,640 Barrels December 1 Over November, Only 37,091 Less Than Last Year. Larger Plants Gaining

By C. O. Willson

RECAPITULATION MID-CONTINENT REFINERIES

	No. of Plants	Capacity	Plants Op. Dec. 1	Daily Runs Dec. 1	Plants Op. Nov. 1	Daily Runs Nov. 1	Daily Inc. in Runs
Oklahoma	108	365,500	49	125,825	52	117,925	7,900
North Texas	70	217,350	34	61,040	37	61,550	*510
Kansas	43	131,100	22	58,200	19	46,300	11,900
North Louisiana	19	48,950	5	20,500	5	20,000	500
Arkansas	16	37,950	8	12,600	8	13,750	*1,150
Total	256	800,850	118	278,165	121	259,525	18,640

*Decrease.

DECEMBER, 1922

	No. of Plants	Capacity	Plants Op. Dec. 1, '22	Daily Runs Dec. 1, '22	Daily Inc. Over Dec. 1, '23
Oklahoma	103	329,100	54	155,180	29,355
North Texas	67	202,600	32	70,100	9,060
Kansas	40	101,500	24	65,100	6,900
North Louisiana	19	35,350	5	14,000	*6,500
Arkansas	14	23,510	11	10,480	*2,120
Total	243	693,060	126	315,260	37,075

*Decrease.

Due primarily to the resumption of runs or large increases on the part of a few major plants the total refinery runs of the Mid-Continent area were 18,640 bbls. greater on December 1 than November 1. This large increase materialized despite the fact that for the entire area three less plants were in actual operation.

A study of the accompanying tables shows that practically all of this increase can be accounted for by the resumption of operations at the Standard Oil Co. of Kansas plant at Neodesha, Kans., and the Sinclair Refining Co. plants at Argentine, Kans., and Cushing, Okla. The Standard plant, which was shut down in the September report the latter part of last month, started running 7,000 bbls. daily through its stills. The Sinclair's Argentine plant, which has also been shut down, is now running 6,500 bbls. daily and the Cushing plant, which was handling rerun in the November report, is now handling 4,800 bbls. of oil daily. These three plants alone practically account for the increase for the entire Mid-Continent area.

Compare With Last Year

It will be noted in the table comparing present runs with those a year ago that despite the disastrous past year of the Mid-Continent refiner daily runs are now only 37,095 bbls. under those of a year ago.

One of the outstanding developments of the past year has been the expansion of the larger companies, while many smaller concerns have been compelled to curtail their runs or shut down.

In this connection the following table giving the 20 largest companies, based on their actual crude runs December 1, is interesting. It shows that the first 10 companies were actually running 117,300 bbls. of the total runs of 278,165 bbls. and the first 20 companies were running 172,800 bbls. daily. The first 10 companies in other words were handling 42 per cent of the crude refined in the Mid-Continent area and the first 20 companies 61 per cent.

Runs of Larger Concerns

Following are the companies, based on their runs to stills December 1:

Company—	Daily Runs to Stills (Bbls.)
Cosden & Co.	21,000
The Texas Co. (3 plants)	18,750
Sinclair Refining Co. (4 plants)	17,250
Empire Refineries (4 plants)	12,800
Imperial Refining Co. and Kettle Creek Refining Co.	9,200
Caddo Central Oil & Refining Co. (2 plants)	8,500
Pure Oil Co. (2 plants)	8,000
White Eagle Oil & Refining Co. (2 plants)	7,800
Marland Refining Co.	7,000
Skelly Oil Co.	7,000
Standard Oil Co. of Kansas	7,000
Transcontinental Refining Co. (2 plants)	6,000
Shaffer Oil & Refining Co.	6,000
Lion Oil & Refining Co.	6,000
American Refining Co.	5,200
Magnolia Petroleum Co.	4,800
Pierce Oil Corp.	4,750
National Refining Co.	4,750
Producers & Refiners Corp. (2 plants)	4,700
Louisiana Oil Refining Corp.	4,000
Total	172,800

Centralizing Output

It will be noted from the above table that the first 10 companies have 22 plants actually in operation at the present time and the first 20 companies 35 plants. Some of these companies have a capacity from two to four times their present runs. It is probable that with the return to normal market conditions this centralization of output in comparatively few companies will become even more marked. It is also worthy of note that no Standard companies are among the first 10 companies and only two—the Magnolia and Standard of Kansas—in the first 20 companies.

In Oklahoma there have been two important shut-downs since the November review. The plants of the Grandfield Oil & Refining Co. at Grandfield and the Cushing Refining & Gasoline Co. at Cushing were shut down the latter part of last month. It is understood that the shut-downs are temporary in both cases.

In Kansas there were several important changes. The present runs of 58,200 bbls. in that State are about normal. Plants which have resumed crude runs since the November report include the Derby Oil & Refining Co., Industrial Refining Co., Miller Petroleum Co., Argentine plant of the Sinclair Refining Co. and the Standard Oil Co. of Kansas.

Premiums for Crude

It is understood that at least three of the plants which have resumed operations and some which were already operating are having difficulty in securing crude supplies without the payment of heavy premiums. It is this situation that is holding down their runs. This situation is more or less general throughout the Mid-Continent area, but is probably more acute in the Kansas area. The Kansas Oil Refining Co. plant at Coffeyville, Kans., has been shut down. The White Eagle Oil & Refining Co. has reduced its runs at its Kansas plant 1,750 bbls. and the Skelly plant at Eldorado is running 2,500 bbls. less than on November 1.

Operations in North Texas December 1 were practically unchanged. The plant of the Iowa Park Producing & Refining Corp. at Iowa Park has been shut down, but this loss in output has been offset by the plant of the Orient Petroleum Co. at Wichita Falls, which is now operating again. There was also practically no change in the North Louisiana area.

The Arkansas operations are practically confined to the plants of the Lion Oil & Refining Co., Kettle Creek Refining Co. and the Root Refineries. The runs of the first named companies are off 1,500 bbls. with a 500 increase at the Root plant.

REFINING OPERATIONS IN OKLAHOMA

Name and location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
*Acme Refining & Pipe Line Co., Jennings	1,000	Shut down	Shut down
Allied Refining Co., Okmulgee	1,500	600	600
Apex Petroleum Co., Cyril	1,200	750	850
*Associated Prod. and Ref. Co., Yale	1,000	Shut down	Shut down
Barnsdall Refining Co., Barnsdall	3,000	3,500	2,750
*Bay State Refining Co., Healdton	1,000	Shut down	Shut down
*Beaver Prod. and Ref. Co., Dilworth	700	Shut down	Shut down
*Big Six Refining Co., Sapulpa	800	Shut down	Shut down
*Bison Refining Co., Quay	1,000	Shut down	Shut down
*Blue Ribbon Refining Co., Walters	500	Shut down	Shut down
Bolene Refining Co., Enid	3,600	3,300	2,500
Bristow Gasoline & Supply Co., Bristow	1,000	800	650
*Buffalo Refining Co., Yale	1,000	Shut down	Shut down
Burk-Cushing Co., Cushing	1,000	Shut down	Shut down
Cameron Refining Co., Ardmore	4,000	2,700	2,750
Canfield Refining Co., Yale	500	125	125
*Carter Oil Co., Cartoco	12,000	Shut down	Shut down
Champlin Refining Co., Enid	16,000	2,500	2,000
*Cherokee Refining Co., Oilton	1,000	Shut down	Shut down
*Chestnut & Smith Corp., Sand Springs	5,000	Shut down	Shut down
Coleman-Nelson Corp., West Tulsa	2,000	Shut down	Shut down
*Coleman-Nelson Corp. (formerly Southern Refining Co.) Haskell	1,000	Shut down	Shut down
Constantin Refining Co., West Tulsa	4,500	Shut down	Shut down
Constantin Refining Co., Devol	10,000	Shut down	Shut down
Cosden & Co., West Tulsa	35,000	21,000	18,000
Cushing Refining & Gasoline Co., Cushing	1,500	Shut down	1,250
Cushing Refining & Gasoline Co. (formerly Modern Refining Co.), Blackwell	1,000	250	350
Daisy Bell Petroleum Co., Wilson	2,000	350	400
*Damascus Refining Co., Lawton	1,500	Shut down	Shut down
*El Dorado Refining Co., Yale	700	Shut down	Shut down
*Equality Refining Co., Oilton	1,000	Shut down	Shut down
Empire Refineries, Inc., Cushing	7,000	3,200	3,200
Empire Refineries, Inc., Okmulgee	2,500	2,500	2,500
*Empire Refineries, Inc., Oklahoma City	2,000	Shut down	Shut down
Empire Refineries, Inc., Ponca City	5,000	3,600	3,600
*Francis Refining Co., Francis	500	Shut down	Shut down
*Frederick Refining Co., Frederick	500	Shut down	Shut down
Fairmont Refining Co. (Champlin), Fairmont	2,500	Shut down	Shut down
*Federal Oil & Refining Co., Cushing	1,500	Shut down	Shut down
Gilmer Oil Co. (formerly Mid-Continent Refining Co.), Ringling	800	200	200
Glen Braden Refining Co., Perry	1,000	Shut down	Shut down
Globe Oil & Refining Co., Blackwell	5,000	1,200	1,250
*Golden Bell Refining Co., Oklahoma City	200	Shut down	Shut down
Grandfield Oil & Refining Co., Grandfield	3,000	Shut down	1,000
*Great American Refining Co., Jennings	2,500	Part. Dismtld.	Part. Dismtld.
Hewitt Refining Co., Hewitt	2,000	1,200	1,300
*Home Oil & Refining Co., Yale	2,000	Part. Dismtld.	Part. Dismtld.
*Indian Oil & Ref. Co. (Biery Oil Co.), Cushing	1,800	Shut down	Shut down
Illinois Oil Co., Cushing	3,000	450	600
Imperial Refining Co., Ardmore	7,000	6,000	6,000
Indiahoma Refining Co., Okmulgee	9,000	Shut down	Shut down
Inland Refining Co., Cushing	3,000	Shut down	Shut down
Johnson Oil Refining Co., Cleveland	3,500	2,600	2,750
*Lawton Refining Co., Lawton	1,000	Shut down	Shut down
*Livingston Refining Co., Walters	3,000	Part. Dismtld.	Part. Dismtld.
Local Refining Co. (formerly Atwood Refining Co.), Oklahoma City	1,000	500	650
Lorraine Refining Co. (formerly Illinois Refining Co.), Bristow	4,000	2,500	2,500
Marland Refining Co., Ponca City	15,000	7,000	6,000
Maud Oil & Refining Co., Maud	400	Shut down	Shut down
Mecca Refining Co. (formerly Crystal White Refining Co.), Allen	1,500	Shut down	300
*Meridian Petroleum Corp., Okmulgee	3,000	Shut down	Shut down
*Meridian Petroleum Corp., Hominy	1,000	Shut down	Shut down
*Meridian Petroleum Corp., Ponca City	,500	Shut down	Shut down
*Midco Petroleum Co., West Tulsa	7,000	Shut down	Shut down
*Noble (Chas. F.) Oil & Gas Co. (Choate Oil Corp.), Oklahoma City	2,200	Shut down	Shut down
*North American Refining Co., Pemeta	1,500	Shut down	Shut down
Navajo Refining Co. (Polar), Sapulpa	2,000	1,000	500
Nyanza Refining Co., Wilson	3,500	700	800
*Oklahoma Star Refining Co., Frederick	500	Shut down	Shut down
Oil State Refining Co., Enid	2,500	650	600
Oil State Refining Co., Allen	600	Shut down	Shut down
Omar Refining Co. (formerly Garber Rfy.), Garber	2,500	1,200	900
Oklahoma Prod. & Ref. Corp., Muskogee	2,500	Shut down	Shut down
*Pawhuska Refining Co., Pawhuska	1,000	Shut down	Shut down
Pauline Refining Co., Hampton	1,200	450	550
Phillips Co. (Waite), Okmulgee	6,000	3,500	3,750
Peppers Gasoline Co., Covington	1,000	350	400
Pierce Oil Corp., Sand Springs	9,000	4,750	4,500
*Pioneer Petroleum Co., Guthrie	2,500	Shut down	Shut down
*Powerine Oil Co., Billings	500	Shut down	Shut down
Producers & Refiners Corp., West Tulsa	7,000	3,200	4,500
Producers & Refiners Corp., Blackwell	3,000	1,500	1,500
Pure Oil Co., Ardmore	7,000	2,500	2,000
Pure Oil Co., Cushing	6,500	5,500	5,000
Rock Island Refining & Pipe Line Co., Duncan	1,000	800	900
*Santa Fe Oil & Refining Co. (formerly Chickasaw Refining Co.), Ardmore	5,000	Shut down	Shut down
Sapulpa Refining Co., Sapulpa	7,000	Shut down	Shut down
Shaffer Oil & Refining Co., Cushing	6,500	6,000	6,000
Sheridan Refining Co. (formerly Pirtle-Pittman Refining Co.), Newkirk	2,000	Shut down	Shut down
*Southern Oil Corp., Yale	6,000	Shut down	Shut down
*Southern Oil Corp., Walters	2,500	Shut down	Shut down
Southwestern Oil Corp. (operated by Bolene Refining Co.), Enid	1,800	Shut down	Shut down
Sun Oil Co., Yale	4,000	1,800	2,500
Sinclair Refining Co., Cushing	6,000	4,800	Re-run
Sinclair Refining Co., Muskogee	....	700	700
Sagamore Oil Corp., Grandfield	2,000	1,700	1,750
The Texas Co., West Tulsa	10,000	7,250	6,250
Texas Pacific Coal Oil Co., Wynnewood	3,000	2,100	2,250
Tidal Refining Co., Drumright	4,500	1,700	2,000
Transcontinental Oil Co., Boynton	3,000	1,200	Re-run
Transcontinental Oil Co., Bristow	5,000	4,000	4,500
Tonkawa Petroleum Co., Tonkawa	2,500	Shut down	150
Travis-Center Refining Co. (Western Oil Sales Co., Beckett	1,500	750	800
Turley Refining Co. (formerly Home Petroleum Co.), Oklahoma City	2,500	150	250
*Union Oil & Refining Co., Grandfield	2,000	Shut down	Shut down
*Wagoner Refining Co., Wagoner	500	Shut down	Shut down
Wilcox Refining Co., Bristow	500	Shut down	Shut down

(Continued on Page 110)

The Oil and Gas Journal
PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

President	Frank T. Lauinger
Vice President and General Manager	Robert W. Egan
Treasurer	H. J. Bryan
Secretary	W. T. Bryan
Editor	James McIntyre
Associate Editor	Andrew M. Rowley
Associate Editor	W. T. Anderson
Associate Editor	C. O. Willson
Advertising Manager	Clarence Morris
Circulation Manager	J. P. Mulkern

TERMS OF SUBSCRIPTION
(By Mail, Postage Prepaid)

Single copies	$ .15
Three months	$2.00
Six months	$3.00
One year (in United States)	$6.00
One year (in Canada)	$7.00
One year (foreign countries)	$7.00

DISTRICT ADVERTISING OFFICES

NEW YORK
30 Church Street

CHICAGO, ILL.
1328 Peoples Gas Bldg.

ADVERTISING RATES ON APPLICATION
Remittances by Checks, Drafts Express or Postal Money Orders should be made payable to
The Petroleum Publishing Company
Cable address, "Oilgasnal"
Telephones: Osage 1930—Osage 7538

MEMBER AUDIT BUREAU OF CIRCULATION

NAVAL RESERVE POLICY

Congressional investigations seldom add to the stock of public knowledge but the Senate's inquiry regarding the Teapot Dome naval oil reserve is proving a valuable exception. The political inuendoes and obvious campaign maneuvering before the committee were to be expected and will be discounted according to partisan prejudice, but the really important developments which give the public an idea of petroleum recovery are worth while.

The notion that naval oil reserves can be stored in the ground failed to take into consideration adverse probabilities known to practical oil men and naval officers. The element of time in production seemed to be forgotten, the idea apparently being that oil wells could be turned on at will. Yet if there should arise an emergency need for naval oil time would be all important So, in regard to drainage by offsets.

Since the practical purpose of a naval oil reserve is to have the oil instantly available storage above ground was essential. That implied expert production, pipe lines and storage. The Government had no such experience, very evident from the failure to grasp the defects of a storage in the ground policy. The logical course was to lease the reserves to practical oil men, who would be capable of producing it, constructing pipe lines and building storage efficiently. The terms of such a contract may be matter of opinion, but the general policy is unquestionable.

The agreement, whereby the cost of production, construction of pipe lines and storage should be paid for by the oil produced, has been criticized by those who say Congress should have been asked to appropriate money to pay for these things. But everyone knows the difficulty there is in getting Congress to deal with a business proposition like that in a business way. The chances are the appropriation would still be in controversy, the naval reserves being drained and pipe lines and storage lacking. After all, whether the cost is paid by oil from the reserves or cash from the treasury is merely a matter of one pocket or another, both belonging to the nation. The point is to get the oil for the navy where it can be had when it is needed.

LOOKING TO ST. LOUIS

The entire oil industry will turn next week to the annual meeting of the American Petroleum Institute at St. Louis.

Assembling at the most critical period in the history of the industry it will be looked to for leadership in counsel and direction. The program announced encourages the hope that it will be given.

First on the list is the utilization of fuel oil and distillates. Second, the cooperation of the entire industry in collecting and disseminating currently the facts as to production, consumption and storage. Third, consideration of the production and conservation of petroleum and its products.

Readers of The Oil and Gas Journal are familiar with this program and what it means. Active cooperation by the oil industry in the development of a simple, inexpensive and practical burner for household heating will mean a market for the bulk product as universal as that for gasoline today, and furnish an automatic check against future depression through overproduction.

The dissemination of the facts about oil production will be the most convincing answer to the campaign of the politicians against the oil industry expected with the reopening of Congress. Oil men have in their daily contact with their 13,000,000 customers at the filling stations an unexampled opportunity to put their case before their fellow citizens. The meeting of the Institute, coming just at the outset of the congressional session, is particularly timely, if accompanied by action. As to the necessity for considering plans for conserving our petroleum resources this year's experience with runaway production should be sufficient argument. But so long as the industry is unorganized, and without an active and continuing leadership, representative of and responsive to every factor in the business, it will be as helpless in periods of stress and crisis as it has been this year.

It is true that every suggestion for concert in counsel and action for the welfare of the industry and the public which consumes its products is usually met with a deprecatory reference to the anti-trust powers of the Department of Justice. Let us see what other industries are doing. Turning to the Commerce Yearbook, just issued by the Department of Commerce, regarding the organization of the iron and steel industry we read:

"There are many trade associations actively at work promoting the interests of the iron and steel and allied industries. The most important association representing the industry, from the point of view of size and extent of activity, is the American Iron and Steel Institute. Other leading institutions include the National Founders' Association, the American Malleable Castings Association, the National Association of Sheet and Tin Plate Manufacturers and the Association of Tin Plate Manufacturers."

Turn to lumber and we read that "Lumber manufacturers are organized into regional associations affiliated in the National Lumber Manufacturers' Association, with headquarters at Washington, which deals with general economic problems affecting the industry."

Then look at what is stated regarding the petroleum industry by this governmental publication:

"The petroleum industry is not thoroughly organized into trade associations, although there are a number of associations, most of which are, however, local in character. The largest national organization is the American Petroleum Institute, organized as a result of the unity of interests developed during the war."

Is there any reason why the petroleum industry should not have a national organization of the scope and activity, dealing with the general economic problems affecting this industry, possessed by other industries? The iron and steel and lumber industries are not deterred by dread of anti-trust restrictions. In fact, both have been and are the recipients of special governmental assistance and protection. Why should not the petroleum industry, as great and as indispensable to the national well-being, receive similar and equal treatment?

It is not a time for timidity. Congress and the public should be told the facts about oil, the hazards of production, the uncertainty of supply and the waste of this irreplacable national resource for lack of authority within the industry to insist upon its conservation.

If the forthcoming meeting of the American Petroleum Institute does nothing else it ought to, at least, provide for a representative leadership that will continue to function aggressively in behalf of the industry the year round, alert to its responsibilities, not afraid to challenge mis-statements in or out of Congress, and daring to tell the politicians and the people the truth.

DRESSER
COUPLINGS DOMINATE

Dresser Style 38 Couplings are made for all sizes of pipe, from ½" up, and are used on pipe lines for every purpose

Dresser Steel Pipe Coupling Style 38, such as was furnished for the 40" gas line shown on the right

Flexible, strong and durable, Dresser coupled pipe lines assure maximum service. There are thousands of miles now in use for the transportation of gas, oil, air and water.

S. R. DRESSER MFG. CO.
BRADFORD, PA., U. S. A.

Oil Securities Hold Recent Advances

Great Improvement in the Petroleum Situation Already But Leaders are Cautious About Making Predictions for 1924

By N. O. Fanning
Room 525 No. 30 Church St., New York

NEW YORK, Dec. 3.—Oil securities were firm during the past week. Advances which had been recorded the two weeks before were well maintained, and some further gains were made in some issues. Maracaibo Oil was one of the features, advancing to more than 27. This company recently let a contract to the Gulf Oil Corp. for the development of part of its Venezuelan concession. Activity and strength in Maracaibo Oil calls attention to the possibility of large operations in Venezuela during 1924 provided output of crude in the United States falls off sharply and prices increase.

The reports of new financing which had been going the rounds in Wall Street were borne out. But instead of "a big Standard Oil company" doing the financing, as one report, widely circulated, had it, the financing was accomplished by the Pan American Petroleum & Transport Co., which sold $12,000,000 6½ per cent sinking fund first mortgage bonds. These were publicly offered by Blair & Co., bankers, at 96 and accrued interest to yield about 7 per cent.

This financing is for the purpose of providing for contemplated development of California properties. At the same time a new company, known as Pan-American Western Petroleum Co. has been organized, and directors have approved new financing whereby the proceeds of its 525,000 shares will also be used to provide additional capital for California development.

The following table of earnings of the Pan American Petroleum & Transport Co., including owned and controlled companies, has been published in connection with the financing:

	*Net Earnings
1923 (1st 6 mos.)	$14,259,009
1922	36,373,892
1921	21,697,534
1920	16,314,085
1919	10,081,629
1918	12,404,448

*Net earnings after depreciation, depletion, interest and Federal taxes at present rates.

The above table shows that 1923 will be a favorable year for the Pan-American Petroleum & Transport Co., in all probability, although it does not compare with 1922, when net earnings after depreciation, depletion, interest and taxes were $36,373,892. The decline may be partly attributed to smaller earnings from Mexican properties, and partly to the decline in oil prices.

Tide Water Oil

The Tide Water Oil Co. has resumed the payment of dividends on its capital stock. It has declared a dividend of $1 per share. If paid quarterly that dividend is at the rate of 4 per cent annually, compared with 8 per cent annually paid when dividends were temporarily discontinued in 1921.

During the first nine months of the current year the company earned net income equal to $6.95 a share on 496,784 shares of stock. Its balance sheet as of September 30, last, showed that the $8,000,000 of bank loans which stood on its books a year previous had been wiped out. Cash and Government securities held amounted to $3,700,000, compared with $1,776,000 on January 1, last.

Leaders Urge Caution

Although there is doubtless great improvement in the oil situation as a whole already, oil leaders are rather cautious in predicting an actual boom in 1924. Indications are that the oil securities market is now discounting expected improvement, and how much farther it will go, of course, depends on how far the recovery in the oil business goes, which can only be determined later on.

There is often a tendency to forget discrimination in the purchase of oil stocks. Caution is necessary when oil stocks are going up as well as when they are going down in price.

The Oil and Gas Journal's Average

The Oil and Gas Journal's index of oil security prices reached 47.74 on November 27, a new high on the movement and a gain of 6.31 points, or about 15 per cent over the low of 41.43 reached on September 18, last. The average on November 27 is higher than at any time since June 19.

The following table shows the average on the last Tuesday of each month so far this year; with net change for the month:

	Average	Gain	Loss
November 27	47.74	6.08	...
October 30	41.66	...	.82
September 25	42.48	...	1.70
August 28	44.18	1.60	...
July 31	42.58	...	4.94
June 26	47.52	...	7.48
May 29	55.00	...	.98
April 24	55.98	...	4.41
March 27	60.39	.72	...
February 27	59.67	1.76	...
January 30	57.91	...	...

This table shows clearly the general trend of oil stock prices during the year. The upward movement culminated in March, while the downward movement, to all appearances, reached the bottom in October, with November a month of recovery.

Dividend Information

The Southwest Pennsylvania Pipe Line Co. has declared the usual quarterly dividend of $2 a share, payable December 31, to stock of record December 15.

Producers & Refiners Corp. has passed quarterly dividend on the common stock. Initial dividend on common stock of $1 was paid March 15, and another of the same amount was paid June 15, 1923. Payment September 15 was 50 cents.

The gross earnings of Cities Service Co. for the 12 months ending with October 31, 1923, were $16,592,772 compared with $14,558,623 in the preceding year, according to the monthly statement issued by the company. Net earnings amounted to $16,077,141, compared with $14,123,421 and net to common stock and reserves was $8,477,409, compared with $6,952,014.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock	Par	§Dividend Rate	Closing Quotations Dec. 4	Nov. 27	Range High	Range Low	1923
1.	Associated Oil	25	6	*26	26½	27⅛	24⅜	
2.	Atlantic Refining, common	100	4	114⅞	118½	160	98⅝	
3.	Barnsdall "A"	25	..	16½	14½	35	9⅞	
4.	Caddo Central Oil	..	..	*2	2	9½	1½	
5.	California Petroleum, common	25	7	23½	22⅞	29⅛	17⅛	
6.	Cosden & Co., common	..	..	31	30½	62¼	22⅝	
7.	General American Tank	..	†3	45	47	71⅜	40	
8.	General Asphalt	100	..	36	32⅞	54	23	
9.	Houston Oil	100	..	61⅞	52½	78	40¾	
10.	Independent Oil & Gas	10	..	6	*5½	11¼	3⅜	
11.	Indiahoma Refining	25	..	2½	*2⅜	9	1¼	
12.	Indian Refining	10	..	*6	*5¼	8½	5	
13.	Invincible Oil	50	..	10⅝	10⅝	19¼	7⅛	
14.	Maracaibo	..	..	26⅝	22¼	22½	16	
15.	Marland Oil	..	..	32⅞	26½	59⅝	18½	
16.	Mexican Seaboard	..	..	14½	14⅛	19⅝	5⅜	
17.	Middle States Oil	10	..	5¼	5½	12¼	4⅜	
18.	National Supply	50	6	66⅝	64	59⅝	54	
19.	Pacific Oil	..	†2	42	41⅞	48⅜	31½	
20.	Pan-American, common	50	16	61¾	61⅛	93½	53	
21.	Panhandle Prod. & Ref.	..	..	*2	*2	6¼	1¼	
22.	Phillips Petroleum	..	†2	32¾	30⅝	69⅝	19⅜	
23.	Pierce Oil, common	25	..	2⅝	2⅜	6	1½	
24.	Producers & Refiners	50	..	26½	23	58¼	17½	
25.	Pure Oil Co., common	25	6	19⅝	20⅛	32	16¼	
26.	Royal Dutch, N. Y., sh	13.40	2.62	51⅝	49⅞	55⅛	40½	
27.	Shell Transport	10	x92½	*34	*33½	41¼	29½	
28.	Shell Union, common	..	†1	15¼	15	19¼	12⅝	
29.	Simms Pet.	10	..	10¼	10½	16⅝	6½	
30.	Sinclair Consolidated, common	..	†2	23	22⅝	39⅝	16	
31.	Skelly Oil	25	..	21⅞	20½	35	12½	
32.	Standard of California	25	8	55⅝	56	64⅛	47½	
33.	Standard Oil of N. J.	25	4	35⅝	35¼	44¼	30⅞	
34.	Standard of New Jersey, pfd.	100	7	116⅝	116¾	118¼	114⅝	
35.	Superior Oil	..	..	2¼	*2⅜	6⅜	2	
36.	The Texas Co.	25	12	41⅞	41¼	52⅞	34⅝	
37.	Texas & Pacific Coal & Oil	10	..	9¼	8½	24⅝	5½	
38.	Tide Water Oil	100	4	115½	114½	144	94	
39.	Transcontinental	..	..	3	3⅝	14½	1¼	
40.	Union Tank, preferred	100	7	*108	*108	114	106	
41.	White Eagle Oil & Ref.	..	2¼	22⅝	22⅝	30⅜	20⅛	
	Standard Oil Stocks							
42.	Anglo-American Oil	5	15	15⅝	15⅝	19¾	13½	
43.	Borne Scrymser	100	12	*140	*135	163	110	
44.	Buckeye Pipe Line	50	14	*73	73½	94	70	
45.	Chesebrough Mfng., com.	100	14	*230	*228	238	205	
46.	Continental Oil	25	3	41	39⅝	50	32½	
47.	Crescent Pipe Line	25	..	*15	*16	25	16	
48.	Cumberland Pipe Line	100	10	106¾	114	116	80	
49.	Eureka Pipe Line	100	8	103	99	117¼	88	
50.	Galena-Signal, common	100	4	66½	*63	78	55	
51.	Humble Oil & Ref.	25	4.8	*34¾	36	41	28¼	
52.	Illinois Pipe Line	100	16	137¼	145	171	115	
53.	Imperial Oil, Ltd.	25	16	102½	104⅝	123	92	
54.	Indiana Pipe Line	50	16	*80	*84	103	81	
55.	Intl. Pet. Co.	..	x50	16	15⅞	24⅝	13¼	
56.	Magnolia Pet.	100	4.5	*139	138	166	123	
57.	National Transit	12.50	16	*22	*22½	29	19½	
58.	New York Transit	100	10	78	*90	138	86	
59.	Northern Pipe Line	100	25	*99	*101	111	96	
60.	Ohio Oil Co.	25	4	66½	66	85⅝	48¾	
61.	Penn-Mex Fuel	25	..	21	*27½	28	10½	
62.	Prairie Oil & Gas	100	8	220	218	272	152	
63.	Prairie Pipe Line	100	8	96½	98	117	93	
64.	Solar Refining Co.	100	15	*170	*178	212	161	
65.	Southern Pipe Line	100	16	92½	*91	116	90½	
66.	South Penn Oil	100	..	128	128	196	100	
67.	South West Pa. Line	100	8	*77	*76	89	66	
68.	Standard of Indiana	25	10	58⅜	59¼	69⅞	49¼	
69.	Standard of Kansas	25	8	41	41½	56¼	36½	
70.	Standard of Kentucky	25	16	97	97¾	109½	76	
71.	Standard of Nebraska	100	20	215	*210	280	186	
72.	Standard Oil of N. Y.	25	5.6	42¼	42⅝	49⅝	35½	
73.	Standard of Ohio, common	100	10	279	281	317	270	
74.	Swan & Finch	100	..	*29	*25	38	21½	
75.	Vacuum Oil	25	10	53	54⅝	55½	40	
76.	Washington Oil	10	..	*22	*22	28	20¼	
	Miscellaneous Stocks							
77.	Cities Service, banker's shares	..	‡21	14	13⅞	18½	12⅝	
78.	Gulf Oil Corp. of Pa.	25	6	57½	*57¼	69¼	45⅝	

*Bid, no sales. †In dollars. ‡6 per cent in cash and 15 per cent stock dividend declared; now being paid in scrip. §The figures carried in this column are kept up-to-date as far as possible but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange weekly was as follows:

Dec. 4	48.66	Oct. 23	42.42	Sept. 11	44.78
Nov. 27	47.74	Oct. 16	42.80	Sept. 4	44.06
Nov. 20	45.26	Oct. 9	43.29	Aug. 28	44.18
Nov. 13	43.84	Oct. 2	43.53	Aug. 14	43.39
Nov. 5	42.60	Sept. 25	42.48	Aug. 7	42.87
Oct. 30	41.66	Sept. 18	41.43	Aug. 21	44.24

STEPTOE LAW DECISION REAFFIRMED BY COURT

WASHINGTON, D. C., Dec. 3.—The Supreme Court today reaffirmed its previous decision in the Pennsylvania, Ohio and West Virginia gas case holding invalid a West Virginia law restricting gas supplies to adjoining States.

Justice Van Davanter announcing the court's decision, said that after a rehearing the court saw no reason to disturb its previous ruling enjoining the West Virginia law.

Justice Holmes, Brandeis and McReynolds dissented and Chief Justice Taft took no part in the ruling.

POWELL PRODUCTION

CORSICANA, Tex., Dec. 5.—Production of the Powell Field on Tuesday, December 4, was 125,400 barrels from 556 wells, an average of 226 barrels per well.

The Skelly Oil Co.'s No. 5 Keith started at 2,000 barrels and No. 7 Keith at 2,500 barrels. All other Skelly wells had quit flowing.

All wells on the Mutual Oil Co.'s Howell lease have quit flowing. The Atlantic Oil Producing Co.'s No. 1 Kellum has quit. The Simms Oil Co.'s No. 3-B H. B. Boyd is producing 1,800 bareels, 5 per cent b. s. The Gulf Production Co. has temporarily abandoned its No. 1 Boyd, Meador survey at 2,988 feet.

PRAIRIE PIPE LINE SHIPMENTS

Prairie Pipe Line shipments for the month of November were 2,650,566.06 barrels, a daily average of 88,352 barrels per day. The average for the month of October was 80,673 barrels a day, indicating an average increase in shipments in November of 7,679 barrels daily.

AT A. S. M. E. CONVENTION

Lee C. Moore, chairman; H. P. Porter, section manager, and H. R. Auerswald, delegate from the Mid-Continent section of the American Society of Mechanical Engineers, are attending the convention of that society in New York.

CUMBERLAND PIPE LINE RUNS

WINCHESTER, Ky., Dec. 3.—The runs of the Cumberland Pipe Line Co. through its lines in the eastern Kentucky fields for the past week were 84,794.67 bbls., for a daily average of 14,132.44 bbls.

The gift that builds most good-will.

This Christmas Give Them *Insurance!*

WITH no greater cost than that of the Christmas basket or the traditional turkey, you can give employees a lasting gift—Life Insurance. It will mean much more to your men—and to you, in increased team-work—than any passing remembrance. 73.8% of the 2,000 employees of the Public Service Company of Northern Illinois chose it above all other company gifts. It's a *unique* gift—one that cannot be duplicated. And its effects will not be gone in a week—or a year. Many concerns rate group insurance as more than a gift—as a profit-paying investment. Why not turn this Christmas into one of double good-will and profit both to you and your employees?

A plan all ready for you

Christmas is nearly here. But, The Travelers, which has planned Christmas Group Insurance for hundreds of industrial and business leaders, has a plan all worked out to fit every business. It includes high grade Christmas cards to mail to your employees announcing the insurance plan, or cards to insert in the Christmas Pay Envelope. The details are ready for you. No obligation—write or wire at once.

The Travelers

Insurance Company

HARTFORD, CONNECTICUT

Better House Heaters Create Oil Market

Three Types of Installation for Various Sizes of Buildings, From Small Homes to Apartment Houses and Hotels

By Ralph T. Baker

CHICAGO, Dec. 3.—Industries are constantly seeking new avenues of development. Engineers are kept on payrolls for the express purpose of suggesting new channels for marketing products. Executives are constantly alert to the possibilities in other industries which show promise of stimulating a phase of their own business.

For several years the oil business has developed along with the perfection of the internal combustion motor. More engines and more automobiles meant to the oil executive the use of more motor fuel. As a result he was keenly alive to the demands of this flourishing industry. He called upon his business to supply the demand for motor fuel and it has done so magnificently.

During recent months, however, the son has outstripped the parent. The oil industry has exceeded the demands of the automobile manufacturers for motor fuel. The result has been productive of new ideas concerning new outlets for petroleum products, originated by far-seeing executives and developed by shrewd engineers.

Not the least of recent developments of interest to the oil industry is the remarkable growth in the use of home burner installations in the eastern and central States.

Sales Increase Tenfold

On the basis of sales over its territory, one oil company asserts that the number of home burners has grown from 10,000 during the winter of 1922 to 100,000 at the present time in the territory covered by the Standard Oil Co. of Indiana, comprising 10 States in the upper Mississippi Valley. Other companies offer figures which compare favorably to those just mentioned.

Plans for supplying fuel to 250,000 home burner installations in these 10 States during the winter of 1924 are now being made by the larger marketers. Thus the enterprise of the oil industry has been coupled with the ability of the engineer in perfecting a new market for petroleum products.

For many months engineers have been working out improvements for home oil burners. The total number of the different makes of burners has been estimated at 1,000 to 1,200. Many of those in use in the eastern States and along the Pacific Coast are not for sale in the Chicago territory, however. One man who is in touch with the situation declares that there are more than 200 makes for sale in the Standard of Indiana territory.

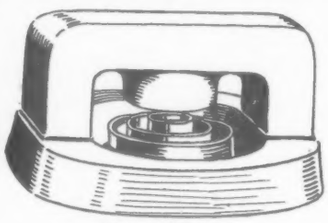
In general, most home burner installations will fall readily into one of three classifications or types. The simplest type is known as the "hot plate" and has numerous modifications and amplifications, at the will of the manufacturer. There are about 100 manufacturers specializing on this kind of installation in the Chicago area.

Hot Plate Type

As a rule, the hot plate type involves a rough grey iron casting which may be placed on the ordinary home furnace grate. The casting is in the form of a shallow dish to which oil is fed from a series of deeper dishes placed in the center of the shallower one. Over the whole is a blower arrangement, operated on the draft from the furnace door.

To operate, the fuel from the tank is fed to the burner through the small feed lines on which are the proper safety and feed valves. The fuel, generally kerosene or straw distillate, flows by gravity from the storage tank until it fills the central and highest-rimmed cup of the casting. It overflows and fills the others, after which the flow is checked by hand and a flame is applied to the oil which flares up and heats the air chamber above. When the chamber is properly heated, fuel is again admitted, which upon mixing with the warm air, forms a combustible gas which is ignited, and the operation becomes continuous with the constant flow of oil from the tank.

This type has obtained particular favor in the smaller towns and cities of the territory and has many installations to its credit on farms. Kerosene is the common fuel, although straw distillate



TYPE "A"

and furnace oil is being used in many instances. Combustion in most cases is imperfect, and as a result the lower flash oils are the most popular. Its utility in homes ranging from five to eight rooms has been demonstrated to the satisfaction of the oil men who are making plans for the tank wagon distribution of straw distillate and kerosene in many small towns of the Central West.

The economy of the installation is a feature. Some makers are asking as low as $25 or $50 for the installation, the burner of which is placed within the small furnaces formerly using coal for house heating. Tankage and piping are small additional charges, the tankage averaging about two 50-gallon tanks which feed the burner through small sized short lines by gravity, the entire installation rarely coming to more than $100. Some devices involving more elaborate safety devices and feeding arrangements are commanding higher prices.

Installations of this type displace from 12 to 15 tons of soft coal during the winter season, figured roughly at eight months. In turn the burner will consume from 1,000 to 1,500 gallons of 41-43 gravity kerosene or 38-40 gravity straw distillate. It is applicable for homes ranging up to 10 rooms.

For Heavier Oil

In the second type, a slightly heavier oil is commonly used, generally straw distillate or a 32-36 gravity gas oil. In order to use the heavier oil, certain mechanical requirements have been found necessary for the successful operation of these burners. In general, it might be said that they are larger, more costly and involve a number of accessories, not present in the type previously discussed. The fuel ordinarily is fed under pressure, created by the use of a blower or mechanical mixer. The oil is mixed with air and sprayed into the furnace where it is ignited by the use of gas pilot lights or electrical ignition devices. Storage is found in large outside tankage and current needs of the installation are fulfilled through a smaller inside tank. Pressure is maintained on all tankage and an elaborate system of thermostat controls is offered by some makers.

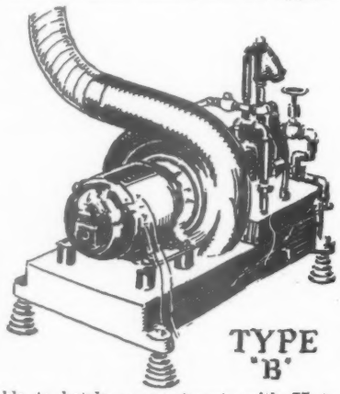
The installations are more popular in the larger cities where the heavier grades of fuel are more available and where the heating demands are larger. The arrangement is applicable for apartments or residences up to 20 rooms. Small hospitals, churches and other buildings of like character find such installations advantageous.

Prices on installations of this type vary from $400 to $600 as a general rule. Including storage tanks and necessary labor the average price for the installations will be about $750. The installation will displace the use of 20 to 25 tons of good soft coal during the winter season, and will consume from 1,500 to 2,000 gallons of distillate or gas oil.

Larger Building Type

In the third type is found the installations which really approach the commercial installations using low grade fuel oil. This type is adaptable to larger apartment houses, hotels and office buildings. It operates on gas oil or high grade fuel oil, from 24 to 28 degrees Baume gravity, as a general rule.

These installations bring into effect the real atomizers of fuel. Feeding is done under pressure, with steam or air forming the carrying medium for the combustion of the small particles of oil in the boiler or furnace. Most installations are under boilers, and are applica-



TYPE "B"

ble to hotels or apartments with 75 to 150 horse power boiler installations.

In general a jet or spray nozzle is used to break up the fuel stream which is fed into the boiler with steam or air pressure. Mechanical devices are more elaborate than on any installations previously discussed in this article. It has been found that the heavier fuels afford the more heat units and are more applicable to the use of hot steam. Rotary blowers have a large following, however.

About 70 makes of this type of installation are found in the Chicago territory. It takes from 100 to 200 gallons of fuel oil to replace a ton of coal in utilizing these burners, depending on the efficiency of the furnace or boiler and the grade of coal formerly used. The average is around 140 gallons. Many customers in the territory, who have been using coal in past years to heat apartment buildings and hotels are now using from 100,000 to 300,000 gallons of 24-26 gravity fuel during the season. Installations of this type are growing more numerous every day.

Simplifying Devices

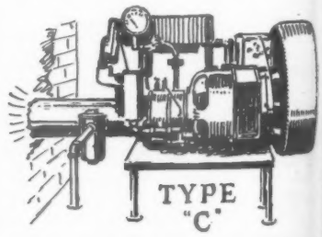
Manufacturers declare they have perfected a simple, mechanical unit, which eliminates many unnecessary devices such as drip pans, levers, gears, etc., in the apparatus. The pumps, atomizer or blower are mounted on the same shaft with the motor and travel at low speeds, thus eliminating noise. Control, as in the second type, is through thermostat, or by steam pressure gauge or hot water regulator. Safety devices are complete and elaborate in most cases. Efficiency is preached by many makers, who offer analysis of the flue gases in support of their contentions.

Recent reports on the decreased consumption of coal coupled with the observed enormous increase in the home burner installations during the past year stand as mute testimony concerning their present popularity. It is a fact, generally conceded by oil men and coal men alike, that fuel oil is gradually taking the place of many coal burning installations in industrial activities. It is a fact also that the utilization of oil in home burners is replacing much coal which was formerly consumed in homes. It is also asserted by many men, in close touch with the growth of home burner installations, that this phase of the oil industry is yet in its infancy.

Distributors of refined products are preparing to take care of the increased demand from the homes for distillate, gas oil and fuel oils. Whereas, during the last winter, arrangements for storage and sale of distillate in small towns was a rarity, companies are now bidding for the trade and in many cases are making elaborate installations of equipment. All states of the Standard Oil Co. of Indiana group are now equipped for the delivery of furnace oil direct to the consumer, and the demand for tank wagon deliveries is growing constantly.

Oil Fuel Grows in Favor

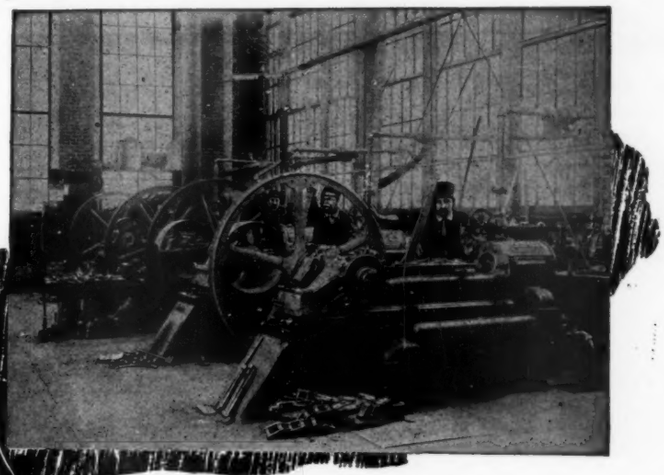
Salesmen have varied arguments supporting the different burners indiviually. Several points in favor of all oil burners in general might be advanced, however. At present there is not a great divergence between the prices necessary for coal and an equal requisite amount of fuel oil for heating. In favor of oil, however, there is a great saving in the labor of attention to the furnace, storage and availability. Oil burners eliminate dust and smoke, avoid the expensive handling of ashes and allow the consumer to buy his fuel supply at shorter intervals, thus getting away from the necessity of putting at one time a relatively large

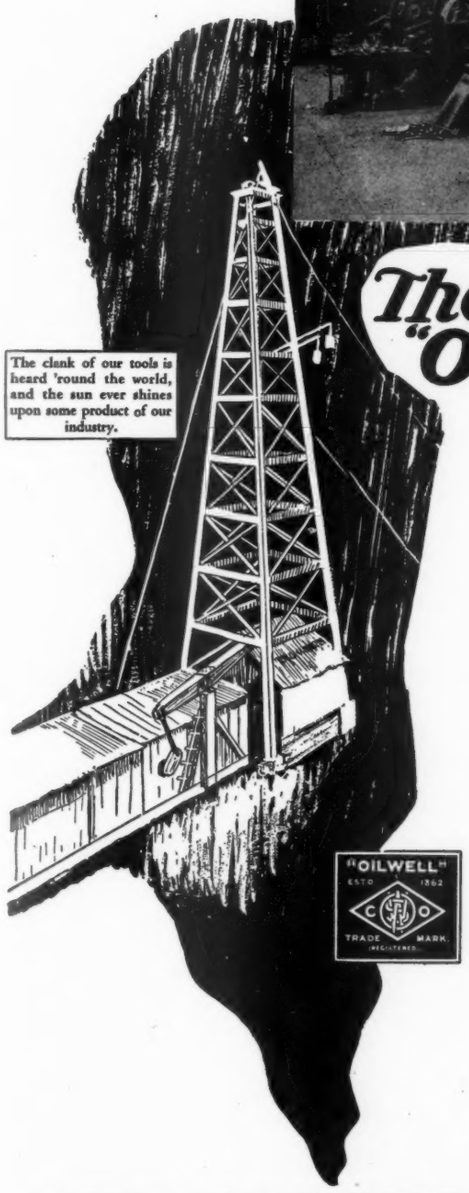


TYPE "C"

amount of money in a fuel supply for the entire winter.

In view of the recent tremendous strides made in opening up a new outlet for petroleum products, distributors of petroleum products everywhere, are working toward a standardization of the efficient burners, as the next step in the development of this phase of the industry. Initial steps toward this end have been taken by the insurance boards, and others are predicted which will work alike to the benefit of the householder and the oil company which supplies the fuel.





The clank of our tools is heard 'round the world, and the sun ever shines upon some product of our industry.

The Men Behind "OILWELL" Engines

Years of experience and practical knowledge on the part of the men who design and fabricate "Oilwell" engines account for the exceptional stamina and economy of those power units. Our men have been with us for years and know thoroughly the thousand and one requirements of the efficient engine. Loyal, competent, wide-awake, these men behind "Oilwell" engines assure satisfactory performance under the most difficult circumstances which all our products must render.

Throughout the country are 100 branch stores to serve your needs. Go to the nearest one or write direct to us.

OIL WELL SUPPLY CO.
PITTSBURGH, U. S. A.
New York San Francisco Los Angeles
Tampico London

OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Dec. 4		Nov. 27		Nov. 20	
50-52 450 end point (Naphtha)	.05½	.05¾	.05½	.05¾	.05¾	.06
56-58 450 end point	.06	.06¼	.05½	.05¾	.05½	.06
58-60 437 end point (New Navy)	.06½	.06⅞	.06½	.06¾	.06	.06½
60-62 400 end point	.07¾	.08	.07½	.07¾	.07½	.07¾
64-66 375 end point	.08½	.08¾	.08½	.08¾	.08½	.09
68-70 360 end point	.09¾	.10	.09½	.10	.09¾	.10¼
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.05¾	.06	.05½	.05¾	.05¼	.05¾
56-58 450 end point	.06¼	.06½	.06	.06¼	.06	.06¼
58-60 437 end point (New Navy)	.06½	.06¾	.06⅜	.06¾	.06⅛	.06½
60-62 400 end point	.07½	.07¾	.07½	.07¾	.07¼	.07½
64-66 375 end point	.08½	.08¾	.08¼	.08½	.08¼	.08½
68-70 350-365 end point	.09½	.09¾	.09¾	.10	.09¾	.10
KANSAS—						
58-60 437 end point (New Navy)	.06¾	.07	.06¾	.07	.06¼	.06½
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.05½	.05¾	.05	.05¼	.05¼	.05¾
50-52 440 end point (Naphtha)	.05¾	.06¼	.05¼	.05½	.05½	.05¾
56-58 450 end point	.06¼	.06½	.06	.06¼	.06	.06¼
58-60 437 end point (New Navy)	.06½	.06¾	.06¼	.06½	.06	.06¼
60-62 400 end point	.07¼	.07½	.07¼	.07½	.07¼	.07½
64-66 390 end point	.08	.08¼	.08	.08¼	.08	.08½
64-66 375 end point	.08¼	.08½	.08¼	.08½	.08¼	.08½
NORTH LOUISIANA—						
56-58 450 end point	.06	.06½	.06	.06½	.06	.06¼
58-60 437 end point (New Navy)	.06¾	.07	.06¾	.07	.06¼	.06½
60-62 400 end point	.07½	.07¾	.07¾			
64-66 400 end point	.07¾	.08	.07¾	.08	.07¾	.08
64-66 390 end point	.08½	.08¾	.08½	.08¾	.08¾	.09
ARKANSAS—						
58-60 450 end point	.07	.07¼	.06½	.06¾	.06½	.06¾
58-60 437 (New Navy)	.07¼	.07½	.06¾	.07	.06¾	.07
64-66 375 end point	.08½	.09	.08½	.09	.08½	.09
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (New Navy)	.09½		.09½		.09½	
PENNSYLVANIA—						
52 Naphtha	.08¾		.09½		.09½	
54 Naphtha	.09		.09¾		.09¾	
56 Gasoline	.09¾		.10		.10	
58 Gasoline	.10		.10¼		.10¼	
60 Gasoline	.10½		.10¾		.10¾	
62 Gasoline	.11½		.11		.11	
64 Gasoline	.13¼		.13		.13	
66 Gasoline	.15¾		.16		.16	
68-70 Gasoline	.16		.17		.17	

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Dec. 4		Nov. 27		Nov. 20	
Grade A, 72-78 under 375 e.p., rec. 90%	.05½	.05¾	.06¼	.06⅜	.06¼	.06¾
Grade B, 76-82, 375 end point, rec. 85%	.05¼	.05½	.05¼	.06¼	.06	.06½
Grade C, 80-88, 350 end point, rec. 78%	.05	.05¼	.05½	.05¾	.05¾	.06
OKLAHOMA (Group 3)—						
Grade A, 72-78, under 375 e.p., rec. 90%	.05¼	.05¾	.05¾	.06	.06¼	.06½
Grade B, 76-82, 375 end point, rec. 85%	.05¼	.05½	.05½	.05¾	.06	.06¼
Grade C, 80-88, 350 end point, rec. 78%	.04¾	.05	.05	.05¼	.05½	.05¾
Grade D, 88-92, 350 end point	.04¾	.05	.05	.05¼	.05¾	.05¾
NORTH TEXAS—						
80-84 compression	.04¾	.05	.05	.05¼	.05¼	.05¾
84-90 compression	.04¾	.05	.05	.05¼	.05¼	.05¾
72-76 absorption	.05¼	.05½	.05½	.05¾	.06	.06½
76-82 absorption	.05	.05¼	.05½	.05¾	.06	.06½
NORTH LOUISIANA—						
Grade B	.05¼	.05½	.06	.06¼	.06	.06¼
Grade C	.05	.05¼	.05¾	.06	.05¾	.06

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Dec. 4		Nov. 27		Nov. 20	
56-62 437 end point	.05⅞	.06⅛	.06	.06⅛	.06	.06¼
60-62 450 end point	.05¾	.06	.06	.06⅛	.06	.06¼
64-66 450 end point	.05⅞	.06⅛	.06⅛	.06¼	.06	.06¼
OKLAHOMA (Group 3)—						
60-62 450 end point	.05¾	.06	.05¾	.06	.05¾	.06
64-66 437 end point	.05¾	.06¼	.05¾	.06¼	.06	.06¼
68-70 430-435 end point	.05¾	.06¼	.05¾	.06¼	.06	.06¼
NORTH TEXAS—						
58-62 440 end point	.06	.06¼	.06	.06¼	.06	.06½
58-60 450 end point	.06	.06⅛	.06	.06⅛	.06	.06⅛
PENNSYLVANIA—						
*60-62	.09½		.10		.10	
*64-66	.09½		.10		.10	
*66-68	.09½		.10		.10	
*68-70	.09½		.10		.10	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Dec. 4		Nov. 27		Nov. 20	
41-43 water white Kerosene	.04⅝	.04⅝	.04⅝	.04½	.04¼	.04½
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¼	.04½
42-43 water white Kerosene	.04⅝	.04¾	.04½	.04¾	.04½	.04¾
44-46 Kerosene Distillate	.05½	.06	.05¼	.05½	.04¼	.05½
KANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04½	.04¾
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04¾	.04½	.04¾	.04¼	.04½
41-43 prime white Kerosene	.04¼	.04½	.04¼	.04½	.04	.04¼
40-42 prime white Distillate	.04	.04¼	.04	.04¼	.03¾	.04
42-44 water white Kerosene	.04¾	.05	.04¾	.05	.04½	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾	.05	.04¾		.04½	.04¾
42-43 water white Kerosene	.05	.05¼	.05		.04¾	.05
ARKANSAS—						
41-43 water white Kerosene	.04¾	.05	.04½	.04¾	.04½	.04¾
42-44 water white Kerosene	.05	.05¼	.04¾	.05	.04¾	.05
ROCKY MOUNTAIN STATES—						
*40-42 prime white Kerosene	.07½		.07½		.07	
PENNSYLVANIA—						
43 Kerosene prime white	.06¾		.06¾		.06¾	
45 Kerosene water white	.07		.07		.07	
46 Kerosene water white	.07¾		.07¾		.07¾	
47 Kerosene water white	.08		.08		.08	
36 Miners' Neutral	.07		.07		.07	

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Dec. 4		Nov. 27		Nov. 20	
24-26 Fuel Oil (sellers' cars, Group 3)	.70	.75	.67½	.72½	.70	.75
22-24 (El Dorado)	.62½	.67½	.60	.67½	.60	.65
18-20 (Smackover)	.55	.60	.55	.60	.57½	.62½
32-36 Gas Oil	.02¼	.02⅝	.02¼	.02⅝	.02¼	.02⅝
38-40 Straw distillate	.03⅛	.03⅜	.03¼	.03½	.03⅛	.03½
KANSAS—						
24-26 Fuel Oil	.85	.90	.85	.90	.85	.90
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
38-40 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
OKLAHOMA (Group 3)—						
24-26 Fuel Oil (buyers' cars)	.65	.70	.65	.70	.65	.70
24-26 Fuel Oil (sellers' cars)	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil (sellers' cars)	.80	.85	.80	.85	.80	.85
32-36 Gas Oil	.02¼	.02½	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.03	.03¼
NORTH TEXAS—						
24-26 Fuel Oil	.60	.70	.60	.65	.60	.65
26-30 Fuel Oil	.70	.75	.65	.70	.65	.70
32-36 Gas Oil	.02¼	.02¾	.02¼	.02¾	.02¼	.02¾
36-38 Gas Oil	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.02⅞	.03⅛	.02⅞	.03⅛	.02⅞	.03⅛
NORTH LOUISIANA—						
20-22 Fuel Oil	.70	.75	.65	.70	.65	.70
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
38-40 light straw distillate	.03		.03		.03	
ARKANSAS—						
38-40 Distillate	.03		.03		.03	.03¼
32-36 Gas Oil	.02¾		.02¾		.02½	.02¾
22-26 Refinery Fuel Oil	.65	.70	.60	.70	.60	.70
GULF COAST (South Texas)—						
Gas oil	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
Fuel oil	1.10	1.15	1.10	1.15	1.10	1.15
PENNSYLVANIA—						
30-34 Fuel Oil	.04¾		.05¼		.05¼	
36-40 Fuel Oil	.05		.05½		.05½	
34 Neutral	.08		.08		.08	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Dec. 4		Nov. 27		Nov. 20	
Pale Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.04	.04¼	.04	.04¼	.04	.04¼
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 4 color, 23-28 cold test	.11¼	.11¾	.11¼	.11¾	.11¼	.11¾
180 vis., 3 color, 23-28 cold test	.12	.12½	.12	.12½	.12	.12½
200 vis., 3 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
200 vis., 4 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 3 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 4 color, 25-30 cold test	.13¼	.13¾	.13¼	.13¾	.13¼	.13¾
240 vis., 3 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
240 vis., 4 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
300 vis., 3 color, 25-30 cold test	.18	.18½	.18	.18½	.18	.18½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.10¼	.11	.10½	.11	.10½	.11
180 vis., 6 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
200 vis., 6 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
220 vis., 6 color, 25-30 cold test	.11¾	.12½	.11¾	.12½	.11¾	.12½
240 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 6 color, 25-30 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13¼
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 6 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
300 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
150-160 vis., 1 color, 40-50 cold test	.04½	.05	.04½	.05	.04½	.05
190-200 dark green, 40-50 cold test	.03½	.04	.03½	.04	.03½	.04
600 steam refined	.16		.16		.16	
590-600 Bright Stock	.23	.26	.23	.26	.23	.26
600-610 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.02¾	.03	.02¾	.03	.02¾	.03

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

PENNSYLVANIA—	Dec. 4	Nov. 27	Nov. 20
150, 3 color	.21¼	.21	.21
180, 3 color	.24	.23½	.23½
200, 3 color	.26	.25	.25
220, 3 color	.29	.28	.28
600, steam refined	.11¾	.11½	.11½
635, steam refined	.14	.14	.14
650, steam refined	.15	.15	.15
600, Pennsylvania flash	.17	.17	.17
630, Pennsylvania flash	.23	.21	.21
*550, E filtered	.15	.14	.14
*600, E filtered	.17	.16¼	.16¼
600, E filtered	.15¼	.15	.15
600, D filtered	.21	.21	.21
550, E filtered	.14¼	.13½	.13½
550, D filtered	.16	.16	.16
Pennsylvania Bright Stock	.31½	.31½	.31½
†122-124 White Crude Scale Wax	.03⅜	.03¼	.03¼
†124-126 White Crude Scale Wax	.03½	.03⅜	.03⅜
300 Mineral Seal	.07⅝	.07¾	.07¾

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—	Dec. 4		Nov. 27		Nov. 20	
Lubricating Stocks:						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.09	.10	.09	.10	.09	.10
No. 2½ color, 150 vis., pale oil	.10	.11	.10	.11	.10	.11
No. 3 color, 200 vis., pale oil	.11	.12½	.11	.12½	.11	.12½
No. 3½ color, 300 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 3½ color, 500 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 750 vis., pale oil	.21	.23	.21	.23	.21	.23
No. 1½ color, 150 vis., pale, filtered	.21	.22	.21	.22½	.21	.22½
No. 2 color, 200 vis., pale, filtered	.23	.25	.24	.25	.24	.25
No. 3½ color, 500 vis., pale, filtered	.32	.33	.32	.33	.32	.33
No. 3½ color, 750 vis., pale, filtered	.38	.40	.38	.40	.38	.40
No. 5 color, 200 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 color, 300 vis., red oil	.13½	.14½	.13½	.14½	.11½	.12½
No. 5 color, 500 vis., red oil	.20	.21	.20	.21	.13½	.14½
No. 5 color, 750 vis., red oil	.02¾	.03¼	.02¾	.03¼	.20	.21

NEW YORK DOMESTIC MARKET

Motor Gasoline:	Dec. 4	Nov. 27	Nov. 20
Greater New York, in steel barrels	.15½	.15½	.15½
New York State (outside Greater New York and New England, tank wagon	.15½	.15½	.15½
New Jersey, tank wagon	.15½	.15½	.15½
V.M.P. Naphtha, in steel barrels	.14½	.14½	.14½
Kerosene:			
Greater New York, tank wagon	.15	.15	.15
New York State (outside Greater New York and New England, tank wagon	.15	.15	.15
Gasoline in bulk, delivered at N. Y.	.09½	.09½	.09½
New Jersey, tank wagon	.14	.14	.14
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.36½	.36½	.36½
Cylinder, light filtered, in barrels	.31½	.31½	.31½
Cylinder, Bright Stock	.44	.44	.44
Cylinder, steam refined (600)	.21½	.21½	.21½
Black, in bulk	.09½	.09½	.09½
Bloomless, white, 30-31 gravity, 170 vis	.43	.43	.43
Bloomless, 885 specific gravity	.10½	.10½	.16½
Red Paraffin:			
170 viscosity	.18½	.18½	.18½
212 viscosity	.20	.20	.20
265 viscosity	.22	.22	.22
295 viscosity	.25	.25	.25
Paraffin, 903 specific gravity	.22½	.22½	.22½
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.35	1.35	1.45
Diesel Oil, at refinery, gallon	.03½	.03½	.03¾
Furnace oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.04	.04	.04¼
Wax, fully refined:			
120-122 a.m.p.	.03⅜	.03⅜	.03⅜
125-127 a.m.p.	.03¾	.03¾	.03¾
130-132 a.m.p.	.04¼	.04¼	.04¼
135-137 a.m.p.	.05¼	.05¼	.05¼

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline, in cases, gallon	.24.4	.24.15	.24.15
Motor Gasoline, in cases, gallon	.24.15	.24.15	.24.15
Motor Gasoline, U. S. Navy, spec., gallon	.10.5	.10.5	.10.50
Naphtha, 60° F., 59-61 spec. grav	.12.0	.12.0	.12.00
Naphtha, 60° F., 63-66 spec. grav	.14.0	.14.0	.14.00
Naphtha, 60° F., 66-68 spec. grav	.15.5	.15.5	.15.50
Kerosene:			
Standard white, in bulk, gallon	.07	.07	.07
Standard white, in barrels, gallon	.14	.14	.14
Standard white, in cases, gallon	.17.15	.16.9	.16.9
Water white, in bulk, gallon	.08	.08	.08
Water white, in barrels, gallon	.15	.15	.15
Water white, in cases, gallon	.18.15	.17.9	.17.9

CRUDE OIL PRICES

November 13.—Joseph Seep Purchasing Agency reduced all grades of Pennsylvania crudes 15 cents. Cabell crude was reduced 15 cents and Somerset light and medium crudes 10 cents.

November 14.—Joseph Seep Purchasing Agency reduced Corning crude 20 cents.

November 15.—Standard Oil Co. of Louisiana reduced Caddo, Homer, Haynesville, El Dorado, Bull Bayou and De Soto crudes from 10 to 25 cents with the exception of Caddo below 32° and Homer below 31°, which were unchanged.

November 16.—The Texas Co. announced that it would purchase all oil in storage and would absorb all storage charges provided the sale was made within 10 days.

November 19.—Magnolia Petroleum Co. advanced Corsicana light (Powell) crude 25 cents. The same company on October 30 reduced this crude 25 cents. Change at that time was not met by all major purchasing companies and resulted in the return to the posted price of $1.

November 20.—Lance Creek and Osage crudes advanced 10 cents.

November 16.—Atlantic Oil and Producing Co. posted new prices for Stephens County, Arkansas crude. The company has two grades replacing four schedules.

Oklahoma and Kansas

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75

Arkansas and North Louisiana

Caddo, 38° and above	$1.10
35° to 37.9°	1.00
32° to 34.9°	.90
Below 32°	.75
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.10
Below 33°	1.00
Bull Bayou, 38° and above	1.05
35° to 37.9°	.90
32° to 34.9°	.75
De Soto	1.10
Crichton	.90
Bellevue	.75
Smackover, 26° and above	.75
25° to 25.9°	.60
24° to 24.9°	.50
Below 24°	.40
*Stephens, Ark., 28° and above	.80
26° to 27.9°	.75

*Posted by Atlantic Oil Prod. Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .60
Salt Creek	.60
Big Muddy	.45
Mule Creek	.45
Grass Creek	.95
Elk Basin	.95
Lance Creek	.90
Osage	.90
Cat Creek (Mont.)	.95
Sunburst (Mont.)	.70
Greybull and Torchlight	.95
Hamilton Dome	.52½
Lander and Lost Soldier based on contracts covering entire production of fields.	

North Texas and North Central Texas

Corsicana light	$1.00
Corsicana heavy	.40
Mexia	1.00
Currie	1.00
Powell	1.00
Thrall	1.00
Moran, Burkburnett, Electra, Archer County, Stephens County, Strawn, Ranger, Desdemona, Pioneer and Young County.	
Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Humble Oil and Refining Co.:	
Below 30°	.80
32° to 32.9°	.90
33° to 35.9°	1.00
36° to 38.8°	1.15
39° and above	1.30
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75
33° to 39.9°	1.00
40° and above	1.25

Gulf Coast

Gulf Pipe Line Co., Goose Creek, Hull, Sour Lake, Batson, Saratoga, Spindletop, Orange, Vinton, Edgerly, Jennings	$1.00
Grade "B," Pierce Junction, Blue Ridge	.90
The Sun Pipe Line Co., Grade "A," Humble, Hull, Goose Creek, Orange, Spindletop, Saratoga, Batson, Dayton, Sour Lake	1.00
Humble Pipe Line Co., Goose Creek, Hull, West Columbia, Orange	1.00
Grade "B," Pierce Junction	.90
Texas Pipe Line Co., Humble, West Columbia, Orange, Sour Lake, Saratoga, Batson, Vinton, Jennings, Markham	1.00
Sinclair Pipe Line Co., West Columbia, Damon Mound	1.00

California

14° to 19.9°	$ .60
20° to 20.9°	.61
21° to 21.9°	.62
22° to 22.9°	.63
23° to 23.9°	.64
24° to 24.9°	.65
25° to 25.9°	.66
26° to 26.9°	.67
27° to 27.9°	.68
28° to 28.9°	.69
29° to 29.9°	.70
30° to 30.9°	.71
31° to 31.9°	.72
32° to 32.9°	.73
33° to 33.9°	.74
34° to 34.9°	.75
35° gravity and above	.76

Eastern States

Penna Grade Oil in New York Transit Lines	$2.60
Bradford District Oil in National Transit Lines	2.60
Penna Grade Oil in National Transit Lines	2.35
Penna Grade Oil in South West Pa. Pipe Lines	2.35
Penna Grade Oil in Eureka Pipe Line Lines	2.35
Penna Grade Oil in Buckeye Pipe Line Lines	2.35
Corning Grade Oil in Buckeye Pipe Line Lines	1.25
Cabell Grade Oil in Eureka Pipe Line Lines	1.20
*Somerset Medium Oil in Cumberland Pipe Line Lines	1.15
*Somerset Light Oil in Cumberland Pipe Line Lines	1.25
Ragland Grade Oil in Cumberland Pipe Line Lines	.75
Lima	1.43
Wooster	1.25
Illinois	1.22
Indiana	1.23
Princeton	1.22
Plymouth	.60
Waterloo	.70
†Petrolia, Canada	2.03
†Oil Springs, Canada	2.10

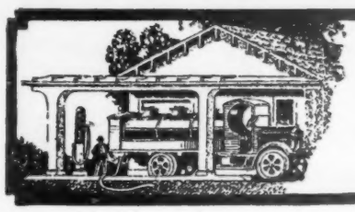
*Somerset oil commands 6 cents over the above posted price.

†Plus Government bounty of 52½c.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$ .80
†Panuco (f.o.b. Mexican ports)	.50
Tuxpam (New York)	1.34
Panuco (New York)	.92

*Plus 29.38c tax. †Plus 16.50c tax. Prices based on contracts.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, Dec. 4

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Chicago district	12.0	..	14.0	10.0

Tank wagon prices on April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 31, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c.

Decatur, Ill.	12.3	..	14.2	10.5
East St. Louis	11.1	..	13.35	9.6
Joliet	12 4	..	14.4	10.7
Peoria	12.2	..	14.2	10.5
Quincy	12 2	..	14.2	10.3
Davenport, Ia.	12.5	..	14.5	10.9
Des Moines	12.5	..	14.5	10.9
Keokuk	12.5	..	14.5	10.9
Sioux City	12.1	..	14.1	10.5
Jo inn	13.2	..	15.2	11.6
Minneapolis	12.9	..	14.9	11.6
La Crosse, Wis.	13.2	..	15.2	11.4
Milwaukee	12.0	..	14.0	10.2
Madison	12.3	..	14.3	10.5
Detroit, Mich.	10.8	..	12.8	11.2
Grand Rapids	12.7	..	14.7	11.1
Saginaw	12.9	..	14.9	11.3
Evansville, Ind.	14.0	2.0	16.0	10.5
Fort Wayne	14.4	2.0	16.4	10.9
Indianapolis	14.2	2.0	16.2	10.7
South Bend	12.4	2.0	14.4	10.9
Fargo, N. D.	14.6	1.0	16.6	13.6
Huron, S. D.	16.0	2.0	18.0	12.1
Sioux Falls	15.5	2.0	17.5	11.6
*Kansas City	11.9	1.0	13.9	9.3
Springfield	11.8	..	13.8	10.2
*St. Louis	11.6	.5	13.9	10.0
*St. Joseph	12.3	.5	14.3	10.2
Wichita, Kans.	11.8	..	13.8	9.8

*City tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
*Pittsburgh, Pa.	15.0	..	20.0	14.0
*Philadelphia	15.0	..	20.0	14.0
*Scranton	15.0	..	20.0	14.0
*Allentown	14.0	..	19.0	14.0
*Altoona	15.0	..	20.0	14.0
Dover, Del.	16.0	1.0	19.0	14.0
Wilmington	16.0	1.0	19.0	14.0
Providence, R. I	15.5	..	18.0	14.0
Springfield, Mass	14.5	..	17.0	14.0
Worcester	14.5	..	17.0	14.0
Boston	14.5	..	17.0	14.0
Hartford, Conn.	16.5	1.0	19.0	14.0
New Haven	16.5	1.0	19.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Atlanta, Ga.	16.0	3.0	18.0	14.0
Augusta	18.0	3.0	20.0	15.0
Macon	18.0	3.0	20.0	15.5
Savannah	16.0	3.0	18.0	14.0
Birmingham, Ala.	16.0	2.0	18.0	15.5
Mobile	16.0	2.0	17.0	13.5
Montgomery	16.0	2.0	18.0	16.0
Clarksdale, Miss	14.0	1.0	16.0	14.0
Jackson	14.0	1.0	16.0	12.0
Natchez	13.5	1.0	15.5	13.5
Vicksburg	13.5	1.0	15.5	13.5
Jacksonville, Fla	16.0	3.0	18.0	14.0
Miami	18.0	3.0	20.0	15.5
Pensacola	16.0	3.0	18.0	14.5
Tampa	16.0	3.0	18.0	14.0
Covington, Ky.	16.0	1.0	18.0	13.0
Lexington	15.0	1.0	17.0	14.0
Louisville	14.0	1.0	16.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Denver, Colo.	13.0	2.0	15.0	12.5
Glenwood Spgs.	20.0	2.0	....	16.5
Pueblo	16.0	2.0	18.0	12.5
Basin, Wyo.	16.0	1.0	....	12.0
Casper	14.0	1.0	16.0	11.0
Cheyenne	15.5	1.0	17.5	13.0
Cody	17.0	1.0	....	14.0
Lander	16.0	1.0	....	13.0
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	15.5
Boise, Idaho	20.0	3.0	22.0	18.0
Salt Lake, Utah	18.0	2.5	20.0	15.5
Ogden	18.0	2.5	20.0	15.5
Albuquerque, N. M.	18.0	1.0	20.0	15.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Newark, N. J.	15.5	..	....	14.0
Atlantic City	15.5	..	....	14.0
Annapolis, Md.	16.0	1.0	19.0	14.0
Baltimore	16.0	1.0	19.0	13.0
Cumberland	16.0	1.0	19.0	15.0
Washington, D. C.	15.0	..	18.0	13.5
Norfolk, Va.	18.0	3.0	20.0	13.0
Petersburg	18.0	3.0	20.0	14.5
Danville	18.0	3.0	20.0	15.5
Richmond	18 0	3.0	20.0	13.5
Roanoke	18.0	3.0	20.0	15.0
Keyser, W. Va.	17.0	2.0	....	15.0
Charleston	17.0	2.0	....	13.5
Parkersburg	17.0	2.0	....	12.0
Wheeling	17.0	2.0	....	13.5
Charlotte, N. C.	18.0	3.0	....	14.5
Hickory	18.0	3.0	....	15.0
Mt. Airy	18.0	3.0	....	14.5
Salisbury	18.0	3.0	....	15.0
Charleston, S. C.	18.0	3.0	....	12.5
Columbia, S. C.	18.0	3.0	20.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Dallas, Tex.	7.0	1.0	10.0	8.0
Fort Worth	7.0	1.0	9.0	10.0
Houston	14.0	1.0	18.0	11.0
San Antonio	7.0	1.0	10.0	9.0
El Paso	12.0	1.0	15.0	12.0
Muskogee, Okla.	9.0	1.0	12.0	10.0
Oklahoma City.	9.0	1.0	12.0	10.0
Tulsa	9.0	1.0	12.0	10.0
Ft. Smith, Ark.	13.0	1.0	16.0	12.0
Little Rock	15.0	3.0	18.0	13.0
Texarkana	15.0	3.0	18.0	12.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
New Orleans, La	12.5	1.0	14.5	12.0
Alexandria	13.5	1.0	15.5	13.0
Baton Rouge	12.0	1.0	14.0	11.5
Lake Charles	13.5	1.0	15.5	13.0
Shreveport	13.5	1.0	15.5	13.0
Memphis, Tenn.	15.5	2.0	17.0	14.0
Chattanooga	15.5	2.0	17.5	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	14.0
Bristol	17.0	2.0	19.0	15.5
Little Rock, Ark	16.5	3.0	18.5	13.0
West Helena	16.5	3.0	18.5	13.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Albany, N. Y.	15.5	..	18.5	14.0
*New York	15.5	..	18.0	15.0
Buffalo	14.0	..	17.0	15.0
Rochester	15.0	..	17.0	13.0
Syracuse	15.0	..	17.0	15.0
Boston, Mass.	14.5	..	17.0	15.0
Providence, R.I.	15.5	..	19.0	15.0
Augusta, Me.	15.5	1.0	19.0	15.0
Manchester	15.5	1.0	19.0	15.0
Burlington, Vt.	15.5	1.0	19.0	15.0

*Price in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
All Ohio points.	16.0	..	18.0	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
San Francisco.	13.0	2.0	16.0	15.5
Los Angeles	12.0	2.0	15.0	15.5
Fresno	13.5	2.0	16.5	17.5
Reno, Nev.	16.5	2.0	19.5	19.0
Portland, Ore.	15.0	3.0	18.0	16.5
Seattle, Wash.	13.0	1.0	16.0	16.5
Tacoma	13.0	1.0	16.0	16.5
Spokane	17.0	1.0	20.0	20.5
Phoenix, Ariz.	19.0	3.0	22.0	21.5
Honolulu, H.	13.5	..	16.5	17.5
Juneau, Alaska	13.5	..	16.5	18.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Incids tax of	Service station	Tank wagon
Omaha	12.25	..	14.25	10.5
Crawford	13.0	..	....	11.25
McCook	13.75	..	15.75	12.0
Norfolk	12.75	..	14.75	11.00
North Platte	13.75	..	15.75	11.75
Scotts Bluff	13.25	..	15.25	11.25

TANK WAGON CHANGES

Effective November 24, Standard Oil Co. of Indiana reduced gasoline tank wagon and service station price 1.3 cent at Fargo, N. D.

Effective November 25 Continental Oil Co. advanced gasoline tank wagon price 1 cent at Salt Lake City, Utah.

Effective November 28, Magnolia Petroleum Co. advanced kerosene tank wagon price 1 cent in Oklahoma.

Effective Dec. 1, Continental Oil Co. reduced gasoline tank wagon and service station prices 1 cent at Salt Lake City and Ogden, Utah.

Effective December 1, Standard Oil Co. of Indiana reduced gasoline tank wagon price 2 cents at South Bend, Ind.

WINTER OIL PRICES STEADY HOUSTON SAYS

HOUSTON, Tex., Dec. 3.—Indications are that zero cold test lubricants will sell around present levels for the whole season. This is the opinion common among refiners of the Gulf Coast area, despite their belief that coastal crude oil will advance within a few weeks.

With the opening of business for December, most of the independent concerns have sufficient business booked for the whole month. The prices are consistent with current quotations. After December there is but one more month of business devoted wholly to winter oils, and that is the chief reason for the opinion that prices will not advance on winter oils.

As for crude oil, an advance on that would bring no surprise. Some independent refiners now are paying premiums for crude purchases, 15 cents a barrel. Before an advance is made, refiners believe they will be called upon to pay as much as 25 cents premium for crude purchases.

With business in refined products steady and satisfactory, refiners of the district are giving no little attention to the future of the crude market. Production of coastal oil continues to drop slightly each week. There are no new fields in prospect. The older fields are almost stagnant, so the crude situation is viewed as certain to bring a price advance. The whole question is when. In most centers it is the belief that the advance will not come until after January 1.

Refiners having connection with independent jobbers through the southeastern States, as well as those of the Middle West are the ones on the coast enjoying the best movement of lubricants at present. In fact some of the smaller concerns with plants along the Houston Ship Channel are buying from the larger concerns in order to fill requirements of jobber customers. And these small concerns have been able to buy at prices which have allowed a profit on such transactions.

The plants operating are running about to capacity. Indications are that this will continue for the winter.

TEXAS OIL CO. ELECTION

HOUSTON, Tex., Dec. 3. — The annual election of directors and officers of The Texas Oil Co., a subsidiary of The Texas Co. in Louisiana, was held at New Orleans. The following directors were elected: T. J. Donoghue and C. P. Dodge, Houston; M. A. Dyer and H. M. Eldridge, New Orleans, and Judge Hampden Storey, of Shreveport. The directors met and organized as follows: President, T. J. Donoghue; vice president, H. M. Eldridge; secretary, M. A. Dyer; assistant secretaries, E. M. Crone and J. B. Duke; assistant treasurers, Guy Carroll and H. G. Symmes.

GASOLINE, GAS AND FUEL OIL OUTPUT LESS DURING WEEK ENDING NOV. 24

The summary of refinery operations for the week ending November 24, compiled by the Western Petroleum Refiners Association indicates about the same operations as the previous week. Slightly more crude was run to the stills this being equalized by a decrease in the net amount of semi-refined oils charged to the stills. The output of gasoline and gas and fuel oil decreased while output of kerosene increased. Stocks of gasoline and kerosene increased while stocks of gas and fuel oil were reduced.

The following tables cover the principal features of the weekly report:

CONSOLIDATED STATEMENT COVERING ALL REPORTING REFINERIES FOR WEEK ENDING 7 A. M., NOVEMBER 24, 1923 (126 PLANTS)

	Kansas	Oklahoma	N. Texas	N. La.-Ark.	Total
Number of refineries reporting	23	54	38	11	126
Daily capacity of stills, bbls.	80,600	250,100	129,850	26,100	486,650
Materials for stills, bbls.:					
Crude oil, Item A	285,371	789,782	526,655	98,807	1,700,615
Other oils (see note) Item B.	24,054	298,426	148,591	21,225	492,296
Total	309,425	1,088,208	675,246	120,032	2,192,911
Output of finished products, gals.:					
Gasoline, Item C	4,379,617	11,531,716	5,706,908	1,170,161	22,788,402
Kerosene, Item D	1,447,645	4,280,521	1,980,796	397,313	8,106,275
Gas and fuel oil, Item E	5,907,789	14,061,603	10,968,975	1,974,419	32,902,786
Stocks on hand at close of week:					
Materials for stills, bbls.:					
Crude oil, Item J	566,463	4,413,403	827,100	929,640	6,736,606
Other oils (see note), Item K	24,545	916,847	275,646	513,114	1,730,152
Finished products, gals.:					
Gasoline, Item L	6,313,117	65,426,866	27,901,347	1,420,901	101,062,231
Kerosene, Item M	2,323,104	8,846,708	7,939,946	357,798	19,467,556
Gas and fuel oil, Item N	10,050,074	49,735,774	43,880,854	2,294,414	105,961,116

Note—Other oils includes all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of Items A and B is therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operation of the refineries during the week. Item K includes all stocks of oils, other than crude, held for further refining.

SUMMARY OF REPORTS OF THE SAME COMPANIES FOR WEEKS ENDING NOVEMBER 17 AND 24

(122 Refineries with a Daily Still Capacity of 470,650 Barrels)

Crude run to stills, bbls.	1,612,082	1,636,265	24,183 Inc.
Semi-refined oils taken from stocks and run to stills, bbls.	504,132	470,569	33,563 Dec.
Total oils consumed by stills, bbls.	2,116,214	2,106,834	9,380 Dec.
Output of finished products:			
Gasoline, gals.	23,096,064	21,856,716	1,239,348 Dec.
Kerosene, gals.	7,728,582	7,840,173	111,591 Inc.
Gas and fuel oil, gals.	37,342,868	31,923,392	5,419,476 Dec.
Stocks on hand at close of week:			
Crude oil, bbls.	5,779,134	5,955,858	176,724 Inc.
Semi-refined held for further ref., bbls.	1,342,110	1,218,742	123,368 Dec.
Gasoline, gals.	98,697,675	100,966,539	2,268,864 Inc.
Kerosene, gals.	18,227,861	19,432,166	1,204,305 Inc.
Gas and fuel oil, gals.	112,492,644	105,528,699	6,963,945 Dec.

Questions and Answers
on the Wiggins Floating Roof

Have any tests been made to show just what evaporation loss does occur in a Wiggins Floating Roof?

Yes. Mr. John H. Wiggins, who made the early investigations of the evaporation loss for the Bureau of Mines, has run tests on tanks equipped with the Wiggins Floating Roof. When combined with the often-quoted table showing evaporation losses under ordinary roofs, also a product of Mr. Wiggins' investigations, the contrast is remarkable.

What are the actual figures?

For example, a 55,000-barrel tank equipped with a wooden deck roof of one-inch sheeting, covered with galvanized or black iron sheets painted white and nailed on, will suffer when containing average Mid-Continent crude, an evaporation loss of 1,500 barrels of gasoline each year. Equipped with a Wiggins Floating Roof, the loss in the same tank would be only 100 barrels—or one-fifteenth as much.

Are those figures for standing storage or working tanks?

Standing storage. The loss in working tanks is much greater.

Just why does the Wiggins Roof make such an impressive saving?

Because it eliminates the air space in the tank.

Could not the same result be achieved by a system of temperature control?

No. As long as there is air above the liquid, evaporation will take place. The floating roof eliminates air and the problem of evaporation loss vanishes with it.

Isn't there a possibility that the roof would float off the tank if the tank should be filled too full?

That is impossible. Such a contingency is entirely imaginary. The roof does not float **on** the oil but **in** it, and floats deep enough so it could never float off the tank. On the other hand, should the tank approach the point of overflow, part of the roof would become visible and expose the condition.

What is the purpose of the trusses above the roof?

They make the roof more stable by keeping it substantially in a horizontal plane.

Does the Wiggins Floating Roof actually float?

Yes, fundamentally it is like the inverted lid of a baking powder can. The rim is considerably higher than the depth of displacement.

Of what material is the roof made?

Steel throughout, with a fire-proof asbestos connection between rim of float and horizontal of seal. No gravel or other similar materials are required. The construction is strong, long-lasting and fire-proof.

Request Slip

Chicago Bridge and Iron Works,
2128 Transportation Building, Chicago.

Gentlemen: When your bulletin on the Wiggins Floating Roof is ready, please send me a copy.

Name.....

Title.....

Firm.....

Address.....

248

Every Tank Can Declare An Extra Dividend

Every tank in your business must pay dividends, just as every other item of equipment has to justify itself or be replaced by one which will. Your working tanks must increase your operating efficiency enough to pay a return on their cost. You do not buy storage tanks unless you see a profit in them.

But why not enable every tank to declare an *extra* dividend on the investment in it? The Wiggins Floating Roof will permit you to do so.

Suppose you have an ordinary working tank handling 10,000 barrels of crude oil a day. That tank is probably wasting $10,000 worth of gasoline every year. If you could stop this waste wouldn't the saving be a handsome extra dividend on that piece of equipment?

You can stop it—the Wiggins Floating Roof will reduce your evaporation losses to comparatively nothing. If your tank is earning, say, ten per cent now, the addition of this remarkably efficient roof should increase the earnings immensely.

Even on standing storage the saving is large. A 55,000-barrel tank containing motor fuel and covered with a canopy roof will lose 1,000 barrels of gasoline a year, not including the loss due to filling and emptying. If the Wiggins Floating Roof saves only 700 barrels of this, the saving in money will be $3,000 at a price of ten cents a gallon, and correspondingly more with gasoline at a higher price.

These statements are facts; and as such they are worth your investigation. We are preparing a bulletin which will give you further information in detail. The adjoining coupon will bring it to you.

CHICAGO BRIDGE & IRON WORKS

CHICAGO 2128 Transportation Bldg. | NEW YORK 3147 Hudson Terminal | DALLAS 1641 Praetorian Bldg. | SAN FRANCISCO 1054 Rialto Bldg.

HORTON Products include the 5-RING 55, 7-RING 80 and other tanks, THE HORTONSPHERE and Refinery Equipment

When the Operator Again Hears the Call

Will Wells Which Have Been Shut in Show as Much Production as Formerly? Improvements in Drilling Equipment

By L. G. E. Bignell
Associate American Society Mechanical Engineers

With the production of oil in most of the Mid-Continent fields materially slowed down on account of the very heavy production in California and Powell fields, there is the question before the producer of what will happen when there is a more active call for Mid-Continent oil, and wells now shut in are opened up again and drilling for new production is started.

It is conservatively estimated that there is now above ground in storage in the United States about 150 days' supply of crude oil, less than was above ground three years ago, when the increased consumption of oil is taken into consideration.

This situation should give encouragement to the producer for it is only logical to assume that the present proration of oil cannot continue much longer, and this being granted it might be well to now consider the possibility of opening up the wells shut in and the bringing in of new production.

It is a much discussed question as to whether old wells that have been producing only a portion of the oil they could produce if opened up will come back with the same amount of oil as they were producing when shut in, or whether they will fall off and fail to equal their production before the shutdown period.

Output Falls Off

It will probably depend largely upon the character of the oil sand and the amount of water that the wells have been producing and it is fairly safe to assume that probably half of the wells will not come back to their former production record when opened up and all oil run.

If this is the case, the estimated production of the Mid-Continent Field will be found to be very much below what it was at the time the wells were shut in and it will be a question of drilling new wells to offset this decline in production.

All fields have naturally fallen off in production during the past summer and fall whether the shut down has been operative or not, so, without question, when the proration condition is removed it will be found that the oil needed to meet the consumption will not be available, so it may be assumed that a very active drilling campaign will be started, perhaps early in the new year.

There is without question a lot of territory in the Mid-Continent Field that can be drilled, so the question of how long it will take to bring in sufficient new production to offset that lost during the shutdown period will resolve itself into a matter of equipment available with which to do the drilling.

During the past few years great advances have been made in the manufacture of equipment of all kinds used in producing oil and it is now possible to select and secure in practically all fields just the right kind of apparatus with which the work of drilling can be done with the greatest speed.

Since Cushing days oil field supply houses have been scattered throughout the oil country in such a way that there is practically a complete supply of all material on hand at all times for the producing company, and in addition to this the means of transporting this material from warehouse to location is much improved, as trucks and tractors are now generally used for this purpose, where all equipment was hauled by teams in the past, the ne wway decreasing the cost of handling as well as a saving of time in getting the material on location.

So it is very safe to assume that when the producing company gives orders to start drilling, equipment can be delivered to the lease quickly.

Rotary Drilling

In each field, past experience has shown that the best type of drilling method to follow, and where the formation is comparatively soft the rotary drilling outfit is giving wonderful results in the matter of shortening the time for drilling wells.

The progress made in the Powell Field in Texas is a good example of what has been done along this line. When drilling was started there it took from three to four weeks to drill the well from the top of the ground to the oil sand, but now this time has been reduced to from seven to nine days, and in one or two instances even as short a time as five days has been recorded. This time does not include setting pipe and cementing the hole, being only the actual drilling time.

In the Powell Field from grass roots to top of the Austin chalk formation the drilling records show that six, seven and even eight hundred feet per day have been made with the rotary drill, which emphasizes how modern methods have made it possible to penetrate the earth very rapidly.

The development of drilling equipment that has been the result of an active demand by the producing companies for better material and better design, and the manufacturer has been assisted in bringing out better equipment through the cooperation of the field men who quickly detect any weakness in machinery or faulty design and the engineer for the manufacturer is quick to grasp the changes needed in the original design and make such changes, so that the development has been in keeping with the producer's requirements.

Standard Equipment

In drilling with standard tools, rigs, rig irons, tools, casing and every other piece of equipment required has been made heavier from year to year and all weak places in the machinery that have been developed by actual use have been strengthened and the quality of the material entering into the manfacture of this equipment has been greatly improved in recent years.

The period of steel equipment throughout on a drilling well is here and wood will be used less and less around wells in the future. This will materially reduce the time required for drilling wells with either rotary or standard tools.

Looking back a few years and considering the numerous shutdowns made necessary by the breaking of some small part or the loosening and shifting of some pulley, it will be seen that the time required to drill wells was much longer then than it is now, for while the minor repairs took only two or three hours each to make, still when they were added together and considered over the time of drilling, they mounted up into quite considerable items of lost time, which all meant increased cost per foot of hole drilled and slower drilling time.

It is a common occurrence to hear the remark that equipment costs much more now than it did some time ago and the producer is constantly asking when the price of material he must use will be reduced, to be as he expresses it, in line with the price they are getting for their crude oil.

Cost Really Cheaper

As a matter of fact, the pound price of equipment has been quite materially reduced since the heavier equipment has been introduced into common use, and this is especially true when it is considered the added service in the way of warehouses in the fields, large stocks, etc. now available.

The life of the equipment has been lengthened and if proper credit is given for the reclaim value of material used on more than one well, it will undoubtedly show that the cost per well has been lowered considerably.

The drilling of modern wells is an undertaking of considerable magnitude and this can probably be best illustrated by considering the work that has been done in the Burbank Field, in Osage and Kay Counties, Oklahoma.

In that field there are approximately 1,105 wells with the lowest casing point at approximately 2,850 feet below the surface.

An average string of casing in this field would be as follows:

700 feet of 15½-inch casing
1350 feet of 12 -inch casing
1800 feet of 10 -inch casing
2400 feet of 8 -inch casing
2850 feet of 6⅝-inch casing

Taking the area of the casing as a basis for the cubic feet of material removed from each hole it will be found that in drilling each well approximately 2,025 feet of rock and earth has been removed.

Based on the average weight of a cubic foot of limestone of 164.4 pounds, this would mean that approximately 332,850 pounds of 166.4 tons of material has been drilled and hoisted to the surface in completing one well.

If, instead of drilling the 1,105 wells the same amount of material had been removed in making a shaft 6x8 feet in the clear, this shaft would have been 8.8 miles deep, far deeper than any mine in the world, and as a matter of fact, if reduced to the depth of average mines, this drilling operation in Burbank would compare very favorably with the shaft sinking operations in mining areas.

Supply Easily Available

Comparing this work with the work done in the Miami-Joplin zinc district in northeastern Oklahoma, where the shafts are not over 300 feet deep, the same amount of material removed there as has been removed in Burbank would give over 135 shafts 6x8 feet in the clear to the mineralized zone.

This illustration of the magnitude of the work done in modern oil fields is only given to show what can be accomplished in relatively short time with the modern drilling equipment and brings us to the consideration of the question propounded in the opening paragraph.

When it is considered that there is equipment available at practically every point where drilling will be carried on even though it may be in so-called "wildcat" territory, that will give the remarkable results when used by the field men now available, it seems that the producer's problem is not how quickly can he bring in production, but rather one of how to produce in the most econmical manner.

Intensive drilling of any area with the modern equipment has proven this time and again that the area can be drilled up within a comparatively short time as may be witnessed by considering the Lyons Pool and Deamer Pool in Okfuskee County, Oklahoma; Mexia, in Texas; Smackover, in Arkansas, the Louisiana fields, and later the Burbank and Tonkawa areas.

All of these pools with their immense quantities of oil have been discovered, drilled up and almost forgotten within the past three years, and any one of them would have been still the scene of very active development if the older drilling methods had been used.

It must be true that there will be an end to the discovery of such highly productive areas within a comparatively short time, and this being granted, it must follow that the oil that we are to use in this country will have to come from the pumping wells which, according to government statistics, average about five barrels per day per well.

Caution in Drilling

So it would seem that the producers' consideration would be one of caution and careful drilling rather than a policy of rushing in madly and trying to see how many wells he can drill in the least possible time, because if this latter policy is followed it will simply mean that oil that could better be left in the ground for future use will be brought to the surface with the probable result of another spell of overproduction and its natural sequence of another shutdown period.

A study of the conditions of under and over production periods will show that the cycle of their occurrence has been growing shorter in recent years and the method of producing is one that leads to periods of very intensive drilling, then a period of great production with a natural cutting of prices and proration of oil runs, and general depression, which is again succeeded by another mad rush to produce which again brings about the depression period.

The producer does not seem to realize that he has been developing along with the oil industry and has now at his command men, material and facilities for bringing oil to the surface that will permit him to produce more oil than the country can possibly use if he is allowed to drill without restraint.

The large buyers of oil must be governed by the general conditions throughout the country to take the refined products they have to offer and their organization has been brought to a high state of efficiency and their plans are laid well ahead so that they can operate in a profitable manner from year to year.

The producer, on the other hand, not being organized, is prone to assume the attitude that he must produce all the oil that is possible within the very shortest possible time and he will do this every time that the price of oil is high enough to show him enough income to permit his drilling.

Cuts Fail to Curtail

It is a well known fact that cutting the price of oil on the lease does not tend to stop the producer from drilling, for if oil had been selling at $2 per barrel and he had 100 barrels production, or a gross income of $200 per day, and then the price is cut to $1 per barrel, with his income cut to $100 per day, he immediately reasons that his natural course is to increase his production to 200 barrels per day so that he can again have his $200 per day income.

It might seem that this is a statement based upon theory, but the recent proration conditions have shown that it is based upon actual fact, for with the price of oil cut the production did not fall off materially and drilling was going ahead as usual, and it was only by actually reducing the producer's income that he was forced to quit drilling and producing oil in excessive quantities.

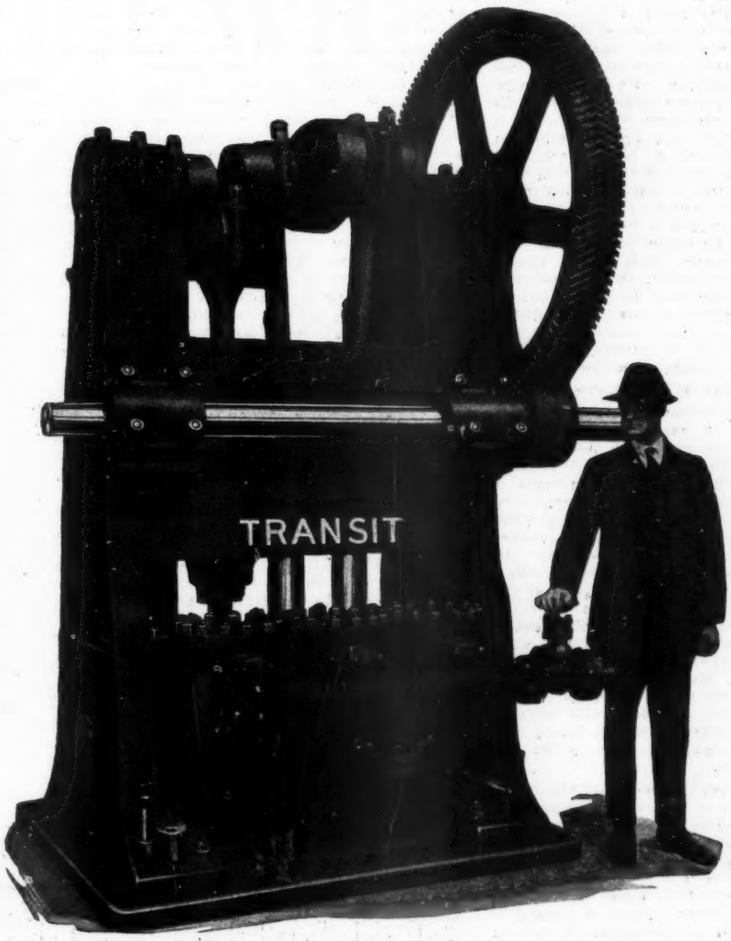
California is blamed for the condition that exists today in the Mid-Continent Field, and perhaps justly, but it was not the larger companies in that field that caused the enormous production, but rather the "unit syndicates" who had no

(Continued on Page 95)

Transit Power Pumps

Vertical *versus* Horizontal

It is not so much a question of which type is the better pump as it is which one will do your work best and cheapest. That is what you are interested in, and that is what we interest ourselves in.



6 x 18" Vertical Triplex Power Pump. 8000 barrels in 24 hours against 900 pounds line pressure. Floor space required 7 feet 7 inches, by 7 feet. 8-inch suction and 6-inch discharge.

We make both kinds of power pumps—Horizontal and Vertical, so that any recommendation we make is at least devoid of bias.

Don't get the idea that the large vertical power pumps are impractical for pipe line service, or that they are a sort of overgrown triplex refinery pump. They are not. Several exemplary pipe line companies swear by verticals, the result of many years of experience.

It all depends on your conditions. We will be glad to go over them with you.

NATIONAL TRANSIT
PUMP & MACHINE CO.
Oil City, Pa.

District Offices: New York Philadelphia Pittsburgh Cleveland Kansas City Houston Denver

"Touch" Important In Pole Tool "Fishing"

Graphic Description of Operation Followed in Galician and Canadian Oil Fields. Imagination Necessary Factor

By Albert Millar

*Paper Read Before the Institution of Petroleum Technologists, London**

"Fishing" in oil well nomenclature, covers a great variety of work, and does not merely represent the recovery of lost tools as is often thought to be the case. Sidetracking of tools or casing also come under the heading of "fishing." Of all practical oilfield work fishing engages the greatest amount of skill and attention combined with an unlimited amount of patience and ingenuity. In all fishing operations "touch" plays a most important part, and this sense can only be acquired by long practice, as does also the knack of constructing suitable fishing tools to suit individual cases. Some smiths possess a really marvellous faculty for forging a tool of the exact shape and dimensions required, so that one would almost think he had demonstrated on the article to be fished for. In most fishing cases the smith plays as equally important a role as the driller, therefore it is most essential that harmony should prevail between the drilling staff and the smithy department.

Must Be Imaginative

A good fisherman must be imaginative and be able to reconstruct the probable position in the borehole in his mind, and to foresee that if a certain instrument is let in, just how that instrument is going to function. What a complicated fishing job is in progress it will be found to be a very good plan, before commencing operations, to draw to scale the probable position in the borehead taking, as a basis, diameter of casing, dimensions of lost tools, measurements of depths, and impressions obtained. This enables one to form a much better idea as to what has happened, the type of tool to be selected, and its construction. As work proceeds and the position becomes clearer, revised sketches should be made and the dimensions of the fishing tool being used should be noted by the side of the sketch.

In the event of the misfortune occurring to lose a tool whilst fishing, the situation can be immediately dealt with. It should always be borne in mind that, at the best, fishing is carried on in the dark, therefore it is most important that every possible detail should be noted and recorded on paper instead of trusting to memory. If, in addition to making sketches, the possible position in the borehole is reconstructed on the surface, a still better idea as to the best method of procedure will be obtained. This is done by taking a length of casing of the diameter being fished in, and duplicating the position in the borehole as far as is known from impressions taken, this also facilitating the construction of the type of fishing tool required.

Thet majority of fishing cases are initially caused through carelessness or lack of proper foresight, and are avoidable to a very considerable extent. For instance, running drilling poles and ropes after they have reached a state of fatigue; using tools of which the joints have become worn; or badly shaped bits causing the pins to break; or screwing up casing too tightly, thereby putting unnecessary strain on the boxes, etc. These are frequent errors. and are apt to lead to more or less complicated fishing.

Before commencing actual fishing operations the distance between the top of the casing and the object being fished for should be accurately measured and checked; time taken in measuring is not time lost but time gained in the long run. An impression block can be run at the same time as measurements are being taken. For this purpose the impression socket (containing from 6 in. to 10 in. of soap or wax) should be of as large a diameter as the casing will allow, and from 5 ft. to 6 ft. long. This socket can also be made to work eccentrically, and should be run until a well-defined imprint has been obtained, as on this depends the type of tool to be employed. Only in the most simple of cases is it permissible to lower in a socket or other fishing tool before the impression block has been run. It is, however, by far the better and safer course not to commence fishing before taking an impression and accurately measuring the distance. The right kind of tool has then to be selected to cope with the situation. Should this not be in stock, or cannot be constructed in the well smithy, then it is advisable to suspend operations until it has been provided. Makeshift tools are dangerous, and should not be used.

Complicated Case

Methods were then described of dealing with lost tools, stuck or lodged tools, slightly bent tools, runaway tools, broken ropes, lost casing, runaway casing and frozen casing. Reference was also made to "sidetracking" where actual withdrawal was not feasible.

Finally, a detailed account was given of an instance of complicated fishing with pole tools arising from a series of mishaps. The well in question was 4,040 feet deep, with 6-inch movable casing hanging free from the casing dogs, the casingshoe being 33 feet from the bottom. Whilst withdrawing the tools, the forty-fifth pole above the drilling jars broke, and the tools, together with the 45 poles, ran away about 680 feet. On the tools striking bottom, the third pole above the drilling bit broke and 42 poles ran down alongside the tools. Of these 42 poles the twentieth broke and ran down alongside the others, wedging them tightly. All the poles were extremely bent and cork-screwed. After an impression was taken, a tongue socket was lowered in and a hold taken on the length containing 22 poles, considerable upward jarring resulting in the recovery of five poles, the fifth having broken off just above the lower joint. It was at this point that the first mistake was made. Instead of measuring the borehole after the first five poles were pulled out, a socket was let in without any precautionary measure being taken, and instead of gripping hold of that length where the five poles had been broken off, a grip was taken of the length containing 20 poles and upward jarring was resorted to. The longer they jarred, the more tightly the poles became wedged, with the result that the socket was left behind with jars, sinker and a further number of poles.

Tightly Wedged

A second socket was let in and jarring continued until the top pole of the 20 broke off, and this, together with the two sockets, was withdrawn. The socket was then let in time after time, and after several days' fishing there still remained 30 poles and the lost tools in the hole, these poles being in three separate lengths, tightly wedged one alongside the other. When it was found impossible to get the poles out by incessant pulling and jarring, those in charge of the operations began for the first time, to reconsider the probable position in the borehole, too late, however, to form any definite idea of the exact position of the runaway poles and tools. There now remained only one course to pursue, i.e., to unscrew the poles one by one, always taking hold of the one which presented itself uppermost. This took a good deal of time, and eventually there only remained the string of tools connected to two drilling poles, plus one and three-quarter poles which had run down alongside.

At this juncture undue haste proved a false step, and was the commencement of one mishap following another. Instead of continuing unscrewing until only the tools remained, the casing was lifted to allow the one and three-quarter poles to fall through. A fishing socket was then let in and a hold taken of the two poles connected to the tools, pulling was commenced, and, judging by the continued heavy pull which was required, it was evident the tools had become somewhat bent. During pulling, the poles broke and the whole thing ran back again, together with the fishing socket, plus two more drilling poles. Left-hand fishing poles of $1\frac{5}{8}$-inch diameter were then lowered in with a heavy fishing socket, by means of which the two poles, together with the lost socket, were recovered; after this hold was taken on the two drilling poles coupled to the drilling tools.

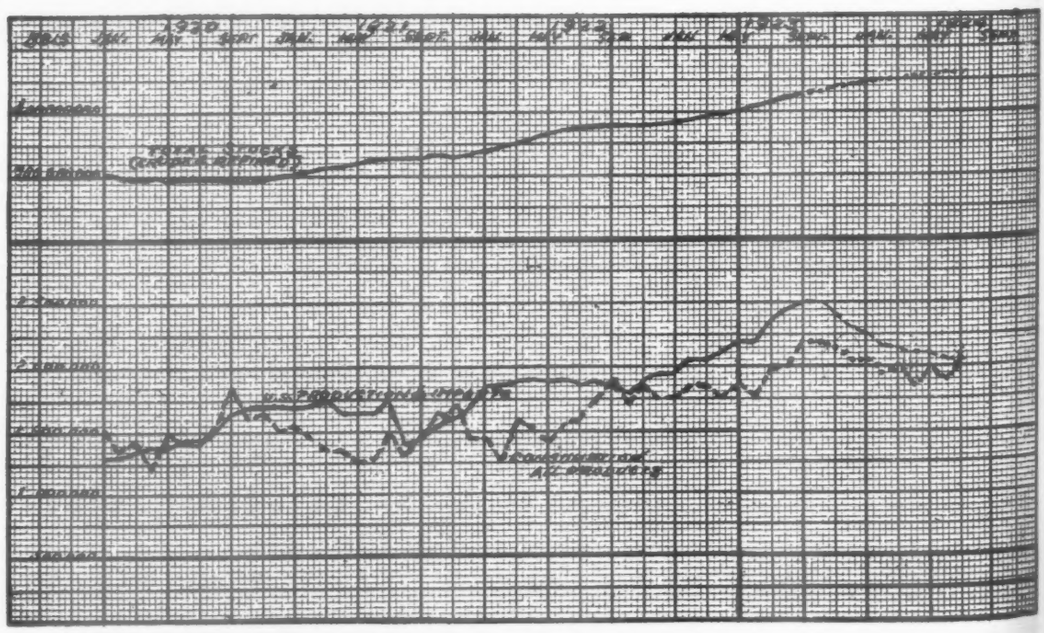
Over-excitement Costly

The work of pulling out went well until there remained only two left-hand poles (plus the lost tools and drilling poles) to be withdrawn from the borehole, when carelessness on the part of the driller's helper (due most likely to over-excitement) to properly screw on the pole swivel to the poles, resulted in the swivel and poles parting company when the next lift was taken, and the drilling tools with the two drilling poles, plus the socket and two left-handed fishing poles, ran away to the bottom. An impression block was now run which showed the pin end of a fishing pole standing vertically in the center of the borehole. Heavy left-hand fishing poles were again let in, and a connection was made by screwing on; but, after considerable jarring and pulling, it was found that the tools would not budge. The poles were then uncoupled, and a die socket let in to unscrew the two left-hand poles which had run down. After

(Continued on Page 134)

*Reported in London Oil and Color Trades Journal.

PROJECTION OF PETROLEUM TREND AS SEEN BY "THE LAMP"



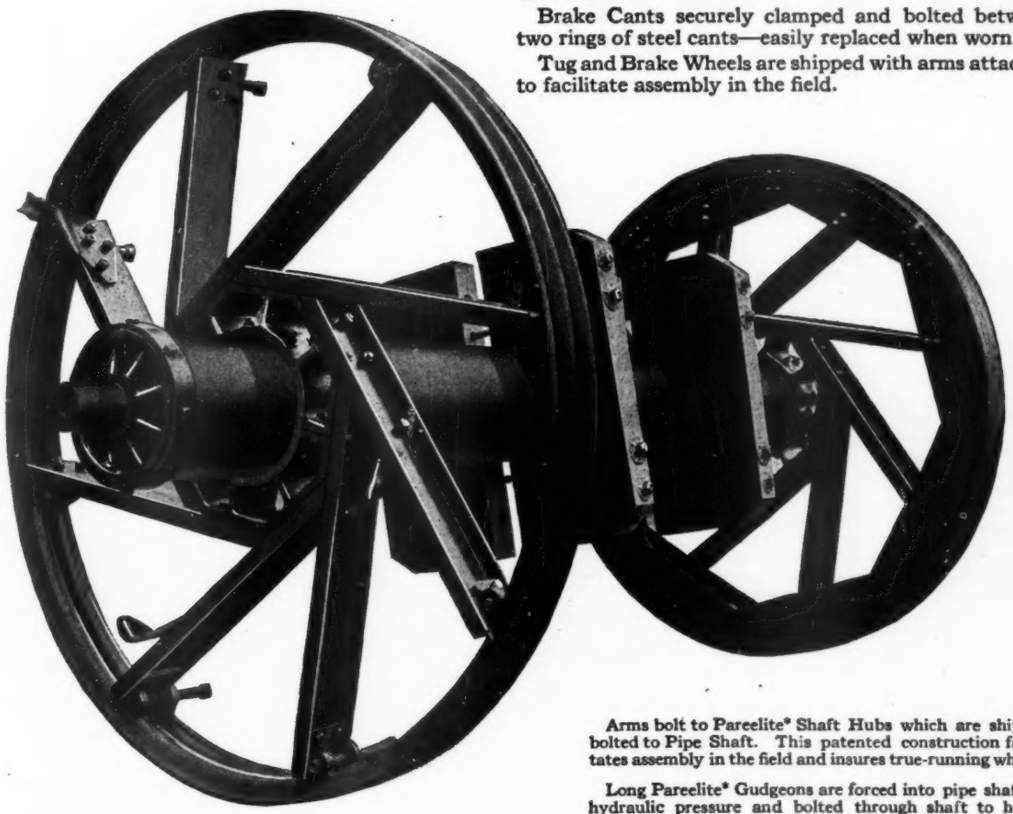
Total Stocks, Production and Imports, and Consumption
The broken line shewing the actual course of consumption to date and its indicated change, meets estimated production about July 1, 1924

PARKERSBURG
METAL TUG
STEEL BULL WHEELS

"V"-Grooved Pareelite* Tug Rim affords positive traction.

Brake Cants securely clamped and bolted between two rings of steel cants—easily replaced when worn.

Tug and Brake Wheels are shipped with arms attached to facilitate assembly in the field.



Arms bolt to Pareelite* Shaft Hubs which are shipped bolted to Pipe Shaft. This patented construction facilitates assembly in the field and insures true-running wheels.

Long Pareelite* Gudgeons are forced into pipe shaft by hydraulic pressure and bolted through shaft to heavy gudgeon bands.

*Pareelite is a "High Manganese" metal—not cast iron—that will sustain a load of 4,320 pounds on arbitration test bar of American Society for Testing Materials, and with only 7/64 inch deflection at breaking point. It has an ultimate tensile strength of 33,680 pounds per square inch.

Parkersburg Metal Tug Steel Bull Wheels are made with standard length shafts and for 9-inch or 12-inch Brake Irons

Ask for detailed information

The PARKERSBURG RIG & REEL CO.

Main Office and Works, Parkersburg, West Virginia. ***New York Office,*** 30 Church St., Room 1510

California Representatives, MESSRS. BUCK & STODDARD
485 California St., San Francisco, Calif.; Box 720, Arcade Station, Los Angeles, Calif.

District Offices and Distributing Warehouses from which Parkersburg Service is available

TEXAS
*Houston
Breckenridge
Corsicana
Graham
Iowa Park
Mexia
Orange
Ranger

WYOMING
*Casper

LOUISIANA
*Shreveport
Haynesville

KANSAS
*Eldorado
Madison

W. VIRGINIA
Parkersburg
Clarksburg

ARKANSAS
*El Dorado
Smackover
McNeil

MONTANA
Sunburst

OKLAHOMA
*Tulsa
Bristow
Drumright
Henryetta
Hominy
Okmulgee
Slick
Tonkawa
Wilson
Shidler
Wetumka

*District Offices

Initial Production at Powell Declines

Flush Output of Wells Completed East of California in November Greater Than During October. Average Per Well Higher

SUMMARIES OF ALL FIELDS

Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Eastern	355	1,543	50	84
Lima	51	729	8	0
Indiana	9	45	3	1
Central Ohio	96	173	27	63
Kentucky-Tenn.	142	1,818	47	5
Illinois	12	749	2	5
Kansas	29	613	16	2
Oklahoma	239	52,900	89	28
North Texas	75	7,418	25	4
East Cent. Texas	136	398,628	18	0
N. Louisiana-Arkansas	152	40,438	29	18
Gulf Coast	90	26,057	16	4
Wyoming	43	14,669	4	0
Montana	22	1,095	6	0
Total November	1,450	546,275	340	214
Total October	1,598	527,056	369	188
Difference	148	19,219	29	26

Rigs and Wells Drilling

Fields—	Rigs	Drg.	Total
Eastern	181	343	524
Lima	4	43	47
Indiana	1	23	24
Central Ohio	46	126	172
Kentucky-Tennessee	16	317	333
Illinois	3	29	23
Kansas	54	140	194
Oklahoma	231	952	1,183
North Texas	61	184	245
East Central Texas	42	216	258
N. Louisiana-Ark.	94	171	265
Gulf Coast	84	278	362
Wyoming	94	389	483
Montana	20	168	188
Utah	0	24	24
Totals October	964	3,580	4,544
Total November	931	3,394	4,325
Difference	33	186	219

For the first time in recent months, the Powell Field in Texas showed a decline in its initial production when during November the flush output of completions in that field amounted to 398,628 bbls., as compared to 405,533 bbls. in October. The significance of the drop is seen when it is remembered the field showed an increase in initial production in October of 74,513 bbls. The initial production of all wells completed east of California during November amounted to 546,275 bbls., as compared to 527,056 bbls. for the completions in October, an increase of 19,219 bbls., although there were 148 less wells completed in November than in October. Oklahoma registered a substantial increase in flush output, jumping from 36,626 bbls. from 304 wells completed in October to 52,900 bbls. from 239 completions in November, an increase of 16,274 bbls., even though there were 65 less wells finished.

New work showed a dropping off during November, there being 33 less rigs and 186 less wells drilling than in October. The average initial production of the oil producers completed during November was 610 bbls. as compared to 506 bbls. for those brought in during October.

OKLAHOMA

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Washington-Nowata-Rogers	0	0	0	0
Osage	32	4,288	9	5
Tulsa	5	0	4	1
Okmulgee	16	340	5	4
Okfuskee, Hughes, Seminole and McIntosh	28	15,846	14	1
Muskogee-Wagoner	9	95	5	2
Creek	34	8,079	17	1
Pawnee	6	785	0	1
Payne	4	52	2	0
Kay	21	13,859	4	0
Garfield-Noble	31	6,378	8	0
Carter	15	2,145	1	5
Stephens-Cotton	17	644	7	4
Miscellaneous	21	389	13	4
Total November	239	52,900	89	28
Total October	304	36,626	79	25
Difference	65	16,274	10	3

Summary of New Operations

County—	Rigs	Drg.	Total
Washington-Nowata-Rogers	0	0	0
Osage	33	130	163
Tulsa	8	15	23
Okmulgee	25	46	71
Okfuskee-Hughes-Seminole-McIntosh	29	81	110
Muskogee-Wagoner	2	18	20
Creek	27	77	104
Pawnee	4	35	39
Payne	1	14	17
Kay	30	91	121
Garfield-Noble	39	81	120
Carter	10	119	129
Stephens-Cotton	1	24	25
Miscellaneous	22	219	241
Total November	231	952	1,183
Total October	224	1,018	1,242
Difference	7	66	59

Although the total number of completions in the Oklahoma fields during the month of November continued the downward trend that has prevailed since July, reaching the low figure of 239, the initial production jumped from 36,626 bbls. in October to 52,900 bbls. the past month, a gain of 16,274 bbls. This increase is almost entirely the result of the large producers that were completed in the Wewoka Field during the month, the figures for that area showing a gain of 13,621 bbls. over the production for October. Creek County also helped with an increase of 3,517 bbls., although it had 5 fewer completions than for the previous month, and in spite of the continued slump of Tonkawa, Kay County added a 5,755-bbl. increase to the total.

The worst slumps occurred in the Osage, occasioned by the shut down of the Burbank Field, and in Garfield and Noble Counties. The Osage area declined 3,164 bbls. during the month, and the counties of Garfield ans Noble together, 1,082 bbls. The suspension of activities in the Hewitt and Graham districts of Carter County also had its effect anr that area also reporteh a loss of 1,229 bbls. from the October figures.

Out of the 239 completions for November, 89 were dry holes and 28 were gassers, leaving only 122 producers. Compared with the completions for October, these figures show a loss of 65 completions, with 10 additional dry holes and 3 more gassers.

New operations in Oklahoma for the month registered a slight decrease, with 231 rigs, and 952 wells drilling, a total of 1,183 operations for November. In October there were 224 rigs, 1,018 wells drilling, making a total of 1,242 operations, or 59 greater than the number for November. The number of drilling wells declined 66 in the past month and the rigs increased by 7. Indications are, however, that the coming month will see a noticeable increase in operations, as a great many of the wells classified as drilling are shut down awaiting the favorable conditions which many producers seem to think are on the horizon.

KANSAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	1	20	0	0
Montgomery-Wilson-Neosho-Allen	0	0	0	0
Miami-Franklin-Anderson	0	0	0	0
Greenwood-Woodson	11	265	6	0
Marion	1	20	0	0
Chautauqua-Elk	3	25	2	0
Miscellaneous	13	283	8	2
Total November	29	613	16	2
Total October	41	1,380	22	3
Difference	12	767	6	1

Summary of New Operations

County—	Rigs	Drg.	Ttl.
Butler	7	22	29
Montgomery-Wilson-Neosho-Allen	0	1	1
Miami-Franklin-Anderson	0	0	0
Greenwood-Woodson	32	35	67
Marion	7	3	10
Chautauqua-Elk	0	7	7
Miscellaneous	8	72	80
Total November	54	140	194
Total October	47	131	178
Difference	7	9	16

Activities in the Kansas fields during the past month were almost conspicuous by their absence, completions declining to the remarkably low figure of 29, and new production fading away almost to the vanishing point, amounting to but 613 bbls. for November. This is a decline of 12 completions and 767 bbls. from the October levels when there were 41 completions and 1,380 bbls. Of the 29 wells completed, 16 were failures and 2 were good for gas leaving only 11 wells as November's contribution to the State's oil producers. The previous month's record was 22 failures, 3 gassers, and 16 producing wells.

The amount of new work picked up slightly, the total for November amounting to 194 operations, or 16 greater than the total for October. Last month there were 54 rigs, and 140 drilling wells in Kansas, while for October the figures were 47 rigs and 131 wells drilling, showing a gain in the past month of 7 rigs and 9 drilling wells. In July, the operations totaled 254, decreasing to 206 in August, and to 179 in September.

Most of the wells classified as drilling are in reality still shut down, although new work is on the increase and a slight expansion may be expected during the coming month.

EAST CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl
Navarro	122	398,628	4	0	21	129	160
Limestone	1	0	1	0	2	27	29
Miscellaneous	13	0	13	0	9	60	69
Total Nov.	136	398,628	18	0	42	216	258
Total Oct.	167	405,533	17	0	73	226	299
Difference	31	6,905	1	0	31	10	41

The November summarization of results in the Powell Field in Navarro County, Texas, shows plainly that the field is declining. The 118 oil wells completed there in November averaged 3,378 bbls. in initial production as against 2,983 bbls. for the 136 oil wells completed in October, but notwithstanding the numerous gushers in the month in review there was a further decline in new work and more evidence that the field was positively defined with the exception of that part of it occupying the leases in the Smith survey and possibly a thin strip in the southwestern end of the field. The Smith survey is the best hope of Powell at present. Up to this writing no very large wells have been completed on it but the leases there show a good body of sand and wells of 1,000 to 5,000 bbls. initial production have been common.

At the close of the month's report there was every indication that the end of the drilling in the field was near at hand. There were 34 fewer rigs and wells drilling than at the close of the October report and 46 fewer than at the close of the September report. In the last week in the month there were nearly twice as many completions as there were new derricks erected.

Fourteen dry holes and abandoned drilling wells were reported from Limestone, Milam, Red River, Raines, Anderson, Cherokee, Williamson, Vanzandt and Hunt Counties. Some of these were virtually abandoned several months ago and carried in the reports as "shut down" until their owners finally said the word that definitely condemned them as failures. Some of them were drilled below 4,000 feet, with no showings of oil or gas. There are yet a number of such tests in the outside districts in the East Central Texas territory still carried on the report that have been drilled deep enough to prove that they will never produce oil, but not yet definitely abandoned.

NORTH CENTRAL TEXAS

Summary of Wells Completed
(Including November 22, 1923)

District—	Comp.	Prod.	Dry	Gas
Wichita	7	88	3	0
Burkburnett	4	765	1	0
Eastland	11	280	4	0
Stephens	8	3,995	2	0
Young	2	30	1	0
Archer	32	2,140	9	0
Wildcats	11	120	5	0
Total November	75	7,418	25	4
Total October	124	9,279	50	6
Difference	49	1,861	25	2

Summary of New Operations

District	Rigs	Drg.	Ttl.
Wichita	9	24	33
Burkburnett	2	25	27
Eastland	6	19	25
Stephens	11	16	27
Young	6	12	18
Archer	17	44	61
Wildcats	10	44	54
Total November	61	184	245
Total October	58	197	255
Difference	3	13	10

A decline of 1,861 bbls. in production and a decrease of 49 in completions, just half as many gas wells and half as many dry holes, marked the November record in the North Central Texas Field. There was a gain of over 3,000 bbls. in Stefhens, but a decrease of nearly 4,000 bbls. in Archer County and a decline of 1,200 bbls. from the wildcats.

There were 3 more rigs, but 13 less drilling operations when the November report closed than at the end of October.

GULF COAST

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl
Batson	2	20	0	0	1	1	2
Blue Ridge	2	150	0	0	0	3	3
Big Creek	1	600	0	0	2	2	4
Damon Mnd	2	75	0	1	0	2	3
Edgerly, La.	1	10	0	0	0	1	1
Goose Creek	6	500	1	0	2	6	8
Humble	2	285	0	0	0	7	7
Hull	9	3,050	2	0	6	14	20
Jennings, La	2	15	1	0	0	0	0
Markham	1	0	1	0	0	3	3
Orange	14	12,825	1	0	3	12	15
Pierce Jct.	1	0	1	0	0	2	2
Spindletop	0	0	0	0	0	2	2
Saratoga	1	75	1	0	0	21	21
Sour Lake	1	100	0	0	2	3	5
Somerset	0	0	0	0	0	5	5
Vinton (La.)	6	450	0	1	1	7	8
W. Columbia	5	715	1	0	0	2	2
Luling	7	6,000	0	0	10	39	49
Laredo Dist.	8	795	0	0	6	14	20
Milam Co.	7	77	0	0	4	8	12
Miscellaneous	12	315	7	2	47	144	191
Total Nov.	90	26,057	16	4	84	278	362
Total Oct.	107	26,672	33	2	64	256	320
Difference	17	615	17	1	20	22	42

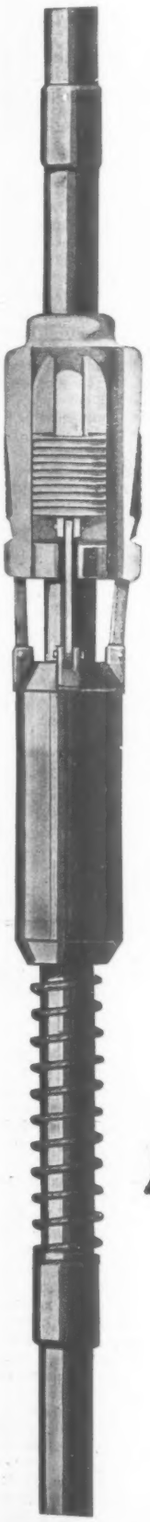
New production in the Gulf Coast pools and the southwest fields shows a decline of 615 bbls. from the October figures. An increase is noted in the number of rigs and drilling wells compared with last month, due to increased wildcatting in Guadalupe, Gonzales and other counties contigious to the Luling Field and an increase of work in the Orange Pool in the Coastal Plains Belt.

Deducting the Luling, Laredo and Milam districts and the wildcat well in Live Oak County, makes the net new production for the Gulf Coast Pools alone 19,485 bbls. against 20,508 bbls. during October. The Orange Pool increased from 5,475 bbls. to 12,825 bbls. during November, two wells being responsible for most of the increase. The Hull Pool declined from 13,445 bbls. to 3,050 bbls. initial output during the month. Practically 65 per cent of the completions in the Coast region were worked over holes, or old wells that had been deepened to lower sands.

The Luling Field increased 900 bbls. during the month and the Laredo districts declined from 945 bbls. to 795 bbls. initial production.

Quotations for the Milam County shallow sand crude were reduced from $1 to 85 cents by the Owens Refining Co. Early in the month the Gulf Pipe Line Co. restored Coastal crudes to $1 per bbl., having reduced them to 75 cents

(Continued on Page 95).



no danger of sticking

Energizing Parts Freely Balanced and Unobstructed

The secret of the GUIBERSON Catcher's absolute dependability lies in the fact that the Weight and Spring (its "motor") fit loosely about the tubing and are not enclosed, resulting in a free and unimpeded action.

No pockets or traps are offered for the gradual accumulation of paraffin, sand, or other obstructing substances.

The strong, uniform spring; heavy weight, sturdy construction and freedom of operation, leave nothing to get out of order.

See your Supply House.

Fully Patented.

THE GUIBERSON CORPORATION
BOX 1106, DALLAS, TEXAS
CALIFORNIA BRANCH: 1737 E. 7th St., Los Angeles

314 New Daniel Bldg., TULSA **825 Mason Bldg., HOUSTON** **506 Trust Bldg., NEWARK, O.**

185

GUIBERSON

BETTER BE SAFE THAN SORRY

Wyoming Field Operations

By F. B. Taylor

Salt Creek producers agree to 100 per cent production. Test shows output down to 130,000 bbls. Decline of gas pressure hastens need for pumping. Midwest completing arrangements for purchase of pumping outfits. Rotary tests in Grass Creek and Salt Creek. Drilling operations in New Mexico.

CASPER, Wyo., Dec. 1.—The Salt Creek Producers Association has agreed to produce all wells in that field at 100 per cent production. This means the virtual capacity of wells and will mean the rapid depletion of the gas pressure with the date when the field must go to pump brought closer.

The test of the Salt Creek Field production is nearing its end. It now appears certain from what has been learned of the test so far that the field will show a decline in production, but this decline is not to be taken as an indication that the field is actually falling off in its oil content, to any appreciable extent.

May Make 130,000 Bbls.

After the test is finished, it is thought that the Salt Creek Field will settle down to a steady production of about 130 000 bbls. daily and that this figure will remain steady for some time to come. The field is about one-thirtieth drilled now, with about 700 wells to the producing sands, so there is little likihood of any cessation of field work due to the decline of the crude production.

The first move to place the Salt Creek Field on the pump has been made, the Midwest Refining Co., the largest operator in the field has asked for and is now completing the final arrangements for the purchase of upwards of 175 pumping outfits which include everything from the crown pulley of the derrick to the perforated pipe at the bottom of the hole.

Bobtail Rigs

The order of the Midwest is expected to be placed in the near future and the rigs will probably be something on the order of the old style "bobtail" that was used through West Virginia and Pennsylvania some years ago. These outfits will be made primarily for electric drive as the Midwest is preparing to install electricity all over the field for power purposes, both drilling and pumping.

The rotary being tried out in the Salt Creek Field is shut down temporarily waiting for a swivel to start a new hole. The rotary in the Grass Creek Field broke its swivel some time ago and the rotary at Salt Creek was just finished with its well so the Salt Creek outfit sent its swivel to the Grass Creek Field and ordered a new one by wire.

The experiment being conducted in the Lance Creek Field in Nobrara County to utilize the gas from that field for many products has been stopped, due to trouble in the boiler system. This plant is to extract the gasoline content, then burn the residuum to form carbon black and at the same time utilize the heat generated by the burning of the gas to make steam which is to drive prime movers connected to electric generators and the power so derived is to be sent to the nearby towns and cities for domestic use. The boilers used in the new plant started leaks on the ends and after trying to run the plant in spite of the leakage, the management ordered a shut down and the boilers taken to Lusk for repairs.

Field Operations

The second well drilled on the Guernsey structure in Platte County, eastern Wyoming, has been abandoned at 2,150 feet with a string of tools in the hole. This is the second attempt to drill a well on this structure and the first hole only went to 1,100 feet when it had to be abandoned on account of a bad fishing job.

The Midwest well drilling in the Baxter Basin in Sweetwater County, lost a lug and will be delayed a few days fishing for same. This is the only well now active in the Baxter Basin and it is the hope of the Midwest that the hole will be completed within a few weeks. It is now about 2,500 feet.

The Sand Hills Oil Co. in the Lost Soldier Field is setting a string of 6⅝-inch casing with a packer on the bottom to make a test of a sand that had a showing of oil and gas at 2,135 feet. This location is on Section 3-26-90.

The Producers & Refiners secured a right of way across the lands of the Rock Springs Grazing Association in Sweetwater County. This closes the gap in the right of way of the Producers & Refiners from the Baxter Basin Field to Rock Springs and the firm hopes to have a line bringing gas from Baxter Basin to Rock Spring by next spring.

A sale of oil property in the Big Piney Field in Lincoln County is reported from Kemmerer; the Charles Lackey interests have turned their holdings of about 2,500 acres in the Big Piney Field to the Utah Oil & Refining Co. of Salt Lake City, the latter a branch of the Midwest Refining Co. or the Standard of Indiana. This deal is said to be for a cash bonus of $25.000 and $1.000 per barrel for the production of the well of the Lackey interests in Big Piney. So far the production of this well, which was drilled in last spring, is an unknown quantity; there is no tankage at the well to hold a test of the capacity. It is further stated that the Utah Oil & Refining Co. will lay a pipe line from the well to the railroad.

Montana Producers

The Dakota Montana Oil Co. drilled in a good producer, estimated at 100 bbls., in the Ellis sand, in Section 30-35-1, in the Sunburst Field, on the east side of the main development, and the Bitter Creek Oil Co. drilled its second well into the same sand and has a well estimated at 150 bbls. The Dakota well found the sand at 1,460 feet and the Bitter Creek well is 1,535 feet to bottom.

The Texas Co.'s New Distribution

An important move was made by The Texas Co. in its new arrangement of distribution of petroleum products for the Rocky Mountain region. Up to now, the region was considered a part of the Mid-Continent distribution system with headquarters in Texas. Stock was shipped from refineries in Oklahoma or Texas to Denver and other points and the output of the refinery at Casper was scattered to many points without much regard to freight haulage or mileage involved. Under the new ruling Casper becomes the central supply point for all of the Rocky Mountain region and this point will also ship products across the Continental Divide to the Pacific Coast in the Northwest and supply the requirements of that region which had been taken care of from the Mid-Continent.

The products of the Mid-Continent refineries of The Texas Co., that formerly came to this region, will now supply the trade in the East and The Texas Co. is preparing to open 40 new filling stations in Chicago in the near future.

The State Public Service Commission of Wyoming granted an application for a certificate for public convenience to lay a pipe line into Cheyenne from the south border of the State to the Cheyenne Light, Fuel & Power Co. A similar application was made in Denver by the Colorado Gas & Oil Pipe Line Co., but was held up because of a protest lodged with the Colorado Commission by the Colorado Public Service Co. and a hearing will be held January 14.

The two pipe line projects are predicated on the recent strike of gas at Wellington, Colo., and the promoters expect to obtain the gas for Cheyenne on the north or Denver on the south. A line to Cheyenne would be about 25 miles long and one to Denver about 75 miles long.

Wyoming Wildcat

One of the best looking wildcat structures in Wyoming is the Neiber Dome in the Big Horn Basin. The Midwest is now drilling a well there and the hole is around 3,450 feet and the first sand that may hold oil is expected about 3,800 feet. From this sand to one that lies about 6,800 feet there are six horizons that may hold either oil or gas and while this structure is deep, its size warrants the supposition that a large field would result if it is found productive.

In the Wyoming fields, the Midwest has one string active in the Elk Basin Field in Park County, and the hole is 350 feet deep. In the Grass Creek Field the test being put down with a rotary is at 1,100 feet and drilling. This well, like the rotary well in Salt Creek, is a test of the rotary outfit for the Grass Creek region. On the Golden Eagle Dome the hole is at 2,520 and making hole fast as a test of the south end of the Big Horn Basin region. A string of cable tools in Grass Creek also of the Midwest, is down 2,850 and mudding a string of casing. The well on the North Casper Creek Dome in Natrona County is shut down and will probably remain so until next spring.

New Mexico Operations

In New Mexico the Midwest is 1,370 feet at the Ambrosia Lake Dome, Section 13-25 10 in McKinley County and on the Hogback Dome the same firm is 763 feet and in the sand on Section 19-26-2. It looks like a producer of light oil. In San Miguel County the Midwest has a well spudding on the Jones Dome and the San Mateo Dome in McKinley County is rigging up.

The Continental Producing Co.'s well on Section 18-46-78, in the Salt Creek Field is making about 50 bbls. per hour and is one of the best producers in the south end of the field. This well is bottomed at 2,465 feet.

The north end of the field completed its test of production the last day of November, but the results will not be definitely known for several days while the computations are being gone over.

Runs

An increase in the production of the Rocky Mountain Region was shown in the pipe line runs from the various fields during the past week.

Salt Creek	123,910
Teapot	4,295
Big Muddy	4,094
Grass Creek	4,428
Elk Basin	1,666
Notches	116
Greybull	28
Rock River	3,600
Lance Creek	3,142
Poison Spider	883
Osage	600
Hamilton Dome	510
Lander	300
Pilot Butte	80
Lost Soldier	4,540
Ferris	100
Cat Creek	4,670
Sunburst	n.d.
Miscellaneous	600
Total	157,868

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 1.—In the Foremost Field, southern Alberta, Canadian Western Natural Gas Co.'s No. 2 has come in with an estimated production of 8,000,000 feet a day. No. 3 is drilling close to the gas sands, and should come in within a week. The completion of No. 2 with a good production indicates the almost certain development in the Foremost district of another large gas field, similar to those at Bow Island and Viking. No. 1 well, completed by the Canadian Western Natural Gas Co. earlier in the year, had an estimated production of 17,000,000 feet a day. The field is a few miles south of Foremost, and about 35 miles from the main line of the Candian Western Natural Gas Co. from the Bow Island fields to Calgary. The Foremost production has not been linked up with the main line, but this will be done when the field is further proven.

Reported Gas Discovery

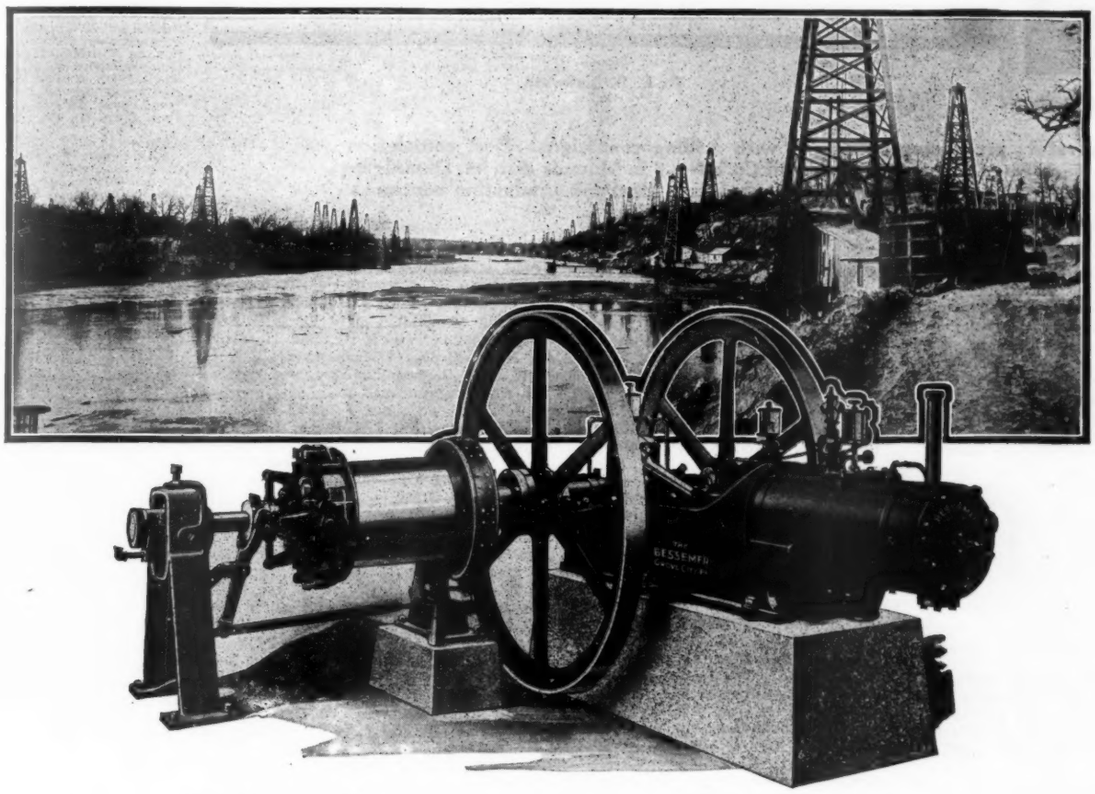
Near Macleod, Alta., a syndicate of five local men, headed by Edgar Greenwood, has filed on considerable territory on the Old Man River, 3 miles west of Macleod, where large gas seepages were discovered last spring. A company is being organized to drill a test for oil and gas. According to the story, heavy rains last May and June caused disastrous floods along the river, one man being drowned and considerable property damage done. A party of men patrolling the river on rescue work discovered gas bubbling through the water, which blazed high when a match was touched to it. The gas was extinguished and the discovery kept quiet till the necessary leases for development could be secured. Drilling will likely be commenced this winter.

In southeastern Alberta, the Canadian Oil & Refining Co. is preparing to start drilling in the new prospective field mapped by Geologists Coulter and Schoenfelt last summer. This area is near the eastern boundary of the province, about midway between the Wainwright-Irma Field of east central Alberta and the Many Island Lake Field, northeast of Medicine Hat. An extensive structure was mapped in this area by the geologists and some 12,000 acres have been leased by the company. Drilling equipment will be moved in this winter for a test.

In Sweetgrass district, southern Alberta, Canadian Oil & Refining Co. (Rogers) Section 29-1-11w4, has finished setting 12½-inch casing and is now running a 10-inch hole. The hole is dry, and in good shape for deeper drilling, though around the 1,500-foot horizon a lot of trouble was experienced with caving.

L. R. Olson, formerly associated with a refining enterprise at Kevin, Mont., has organized a company, financed by Sweetgrass, Mont. and Coutts, Alta. men to build a 200-bbl. refinery at Coutts. Crude is to be brought by a line from the Montana field. Interests represented by John L. Mercer are planning to erect a re

(Continued on Page 108)



Not *"too many triggers"*

We asked the Superintendent of Production of a company which is one of the largest buyers of Bessemer Engines just why he chose the Bessemer.

His answer was brief and to the point.

"It hasn't too many triggers."

Then he went on to say that long experience had exclusively proved to them that Bessemers, because of their simplicity, meet oil-field conditions better than any other engine they had tried—"and we've tried them all."

It doesn't take an expert to make a Bessemer operate—dependable performance *is built into them.* Buy performance—not "triggers"—buy Bessemers.

THE BESSEMER GAS ENGINE COMPANY
58 York Street Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Oklahoma Field Operations

By C. D. Lockwood

Operators proceeding cautiously with drilling campaigns. Best completion of week was Oklahoma Eastern Oil Co.'s No. 6 in Mounds district, Okmulgee County, which started at 200 bbls. an hour. Burbank production continues to decline. Creek County showing more activity.

TULSA, Okla., Dec. 3.—While Oklahoma producers regard the situation as greatly improved and are optimistic about the future, and while there has been considerably more activity during the past week, especially in wildcat areas, than has been in evidence for some time, they seem inclined to proceed cautiously with their drilling campaigns, and many are waiting for further developments.

The week was marked by the absence of gushers, most of the completions being of the smaller variety. The only exception worthy of note was the Oklahoma Eastern Oil Co.'s No. 6, NW cor. SW SW, Section 24-16-12, in the Mounds district of Okmulgee County, which picked up the Wilcox sand at 2,499 feet and came in for 200 bbls. an hour. At the last report, it was making 100 bbls. an hour. The Oklahoma Eastern Oil Co. is a subsidiary of the Oklahoma Natural Gas Co.

Oklahoma's deepest drilling well the Kingwood Oil Corp.'s No. 1 Barnett, NW cor. NE SW, Section 7-7-10, just east of Holdenville, has found what is believed to be the big lime at 5,052 feet, and is drilling ahead.

The Wewoka Field of Seminole County failed to bring forth anything of interest during the week, the Dixie Oil Co.'s No. 1 Harris, SE cor. NW NE, Section 32-8-8, and the Producers & Refiners Corp.'s No. 2 Long, NE cor. SE SW NE, same section, having drilled into hard sands and being prepared for shots.

The daily average production of the Wewoka Field fell to 16,989 bbls. daily from 18 wells, during the week ended November 28, a decrease of 983 bbls. in comparison with the figures for the previous week, although there was one additional well producing.

Burbank Output Down

The Burbank production likewise decreased to the extent of 2,334 bbls. daily from the same number of wells as were producing the week before. The Burbank figures for November 28 were 84,110 bbls. and 1,113 wells.

The Tonkawa Field reported an increase of 157 bbls. daily average production, and an increase of 3 wells, with 594 wells making 47,749 bbls.

Field operations registered a decrease throughout Oklahoma during the week of November 24, the total amounting to only 1,280 operations compared with 1,292 for the week of November 17. There were, however, 5 more locations and 9 more wells drilling on the later date, the loss being in the number of wells shut down. The detailed figures for the two weeks were: On November 24, 67 locations, 217 rigs, 527 wells drilling, 469 wells shut down. On November 17, 62 locations, 219 rigs, 518 wells drilling and 493 wells shut down. The difference is largely due to the completion and resumption of drilling on a number of the wells previously reported as shut down.

In Okfuskee County, Bassett & Storm's No. 1 Dyer, NE cor. NW, Section 12-13-7, was a 55-bbl. producer naturally from sand at 3,553-63 feet. The Wilcox Oil & Gas Co. and Oswalt were fishing at 400 feet in their No. 1 Kiyer, SW cor. Section 3-13-8. The Skelly Oil Co.'s No. 1 Colbert, SW cor. SE, Section 4-13-8, was making 350 bbls. naturally from sand at 3,494-3,516 feet.

T. T. Blakely's No. 1 Harjochee, NW cor. NE SE, Section 30-12-10, was a failure at 3,508 feet. Harry Fair's No. 4 Thompson, CEL NE NE NE, Section 1-12-11, was a rig. Burton McLane and others were cleaning out their No. 1, SE cor. NE NE, Section 1-12-11, at 2,518 feet, preparing to drill deeper.

In Okmulgee County, Eagle Pitcher's No. 4 Wolf, NW cor. SW NW, Section 34-12-12, was drilling at 580 feet.

In Stephens County, the Magnolia Petroleum Co.'s No. 3 Gaddis, NW cor. SW NW, Section 19-2s-7w, was dry and abandoned at 3,840 feet.

Creek County Active

Creek County was the scene of considerable activity. The Phillips Petroleum Co. had rigs in place for No. 1 Cowney, SW cor. SE, Section 30-15-8, and for No. 1 Charles, SE cor. NE SE, Section 25-15-7. The Independent Oil & Gas Co. was drilling at 900 feet in its No. 1 Tiger, NE cor. SW, Section 36-15-7, and the Roland Oil Co. at 280 feet in No. 5 Alec, C NE NW SW, Section 2-15-8. C. G. Tibbens treated No. 1 Bruner, SE cor. Section 12-14-8, with 60 quarts in sand at 2,325-73 feet and it made 60 bbls. of 40 gravity oil.

In the northern part of the county, the Sidwell Drilling Co. abandoned as dry at 3,458 feet its No. 1 Deere, SW cor. SE, Section 23-18-8. Bailey and others were drilling No. 1 Barnett, NE cor. SW, Section 31-19-9, at 700 feet. The Turman Oil Co.'s No. 1 Lasley, SW cor. SE, Section 4-17-8, was a rig. The Flesher Oil Co.'s No. 1 Lasley, SE cor. NW, Section 7-17-8, was rigged up and shut down.

A 40-quart shot in the Duquesne Oil Co.'s No. 2 Walker, NE cor. NW NW, Section 23-17-8, in sand from 2,304 to 2,315 feet resulted in 1,000 feet of oil in the hole, which is being cleaned out. The estimated production was 30 to 35 bbls. The Wilcox Oil & Gas Co. and Oswalt's No. 1 Hawkins, CEL SE SE, Section 33-17-8, was dry and abandoned at 3,777 feet.

The Pure Oil Co. brought in a gasser estimated at from 20,000,000 to 25,000,000 feet from sand at 2,660-65 feet. It was No. 1 Wright, SE cor. NW, Section 19-17-9. The broken sand was topped at 2,618 feet. Wood & Farren's No. 1, SE cor. NW SE, Section 21-17-9, was good for 200 bbls. of 40 gravity oil naturally from sand at 2,553-80 feet. The Amerada Petroleum Corp. had a rig up for No. 1 McIntosh, NE cor. NW, Section 30-17-9, and the Wilcox Oil & Gas Co. & Whitton were rigging up No. 1-A CSL SE SE NW, Section 11-17-10.

Seminole County did not show a great amount of activity. The Dixie Oil Co. had a cellar dug and was moving in timbers for No. 1 Parker, NW cor. SE NE, Section 33-8-8, and was drilling four others: No. 1 Long, NW cor. NE SE, Section 32-8-8 at 200 feet; No. 5 Long, CWL SW SE NE, same section, at 340 feet; No. 2 Harris, SW cor. NW NE, same section, at 345 feet; and was building a rig for No. 3 Foster, C SE SW SW, Section 28-8-8. Davis & Malcona were spudding in No. 1 Graham, SE cor. NW SW, Section 13-9-7.

In the Sayre district of Beckham County, Santrock & Curtiss were spudding their No. 1 Steadman, SW cor. SE NW, Section 14-9-23w. Simpson & Hall's No. 1-A Marshall, C NW SE NW, Section 33-9-23w, was a rig, and Heydrick & Bridwell's No. 1 Hackathorne, C NW SW NW, Section 32-9-23w, was rigging up rotary equipment.

In Pontotoc County, Floyd O. Howarth was spudding No. 1, SW cor. NE, Section 19-5-7.

In Hughes County, W. T. Thurber Co. was spudding No. 1 Foster, SE cor. SW SE, Section 5-7-8.

In Pawnee County, Homes and others had a rig up and tools moved in for No. 1 Guffy, SE cor. SW NW, Section 27-20-9.

The Mutual Oil Co. got a couple of small wells in Tulsa County. No. 1 Lester, C NE SE NW, Section 10-19-10, was good for 30 bbls. naturally from sand at 1,687-1,709 feet, and No. 2 Lester; NE cor. SW NE, same section, was making 75 bbls. naturally from sand found at 1,690 to 1,712 feet. Total depth was 1,726 feet. Nelson Oil & Gas Co. had a rig for No. 2 Enriques, CNL SW NE, Section 15-19-10.

In Lincoln County, the Wilcox Oil & Gas Co. was spudding its No. 1 White, NW cor. SE NW, Section 2-13-6.

Burbank Production

The daily average production in the Burbank Field by companies during the week ended November 28 was as follows:

Company—	Wells	Bbls.
Carter Oil Co.	165	8,417
Comar Oil Co.	7	245
Cosden Oil & Gas Co.	68	1,817
Devonian Oil Co.	16	518
Gardner Petroleum Co.	20	874
Gypsy Oil Co.	149	12,601
Kewanee Oil & Gas Co.	12	231
Laurel Oil & Gas Co.	16	478
Lorraine Oil Co.	15	362
Midland Oil Co.	5	153
Mid-Kansas Oil & Gas Co.	20	3,322
Peters & Oliphant	1	312
Phillips Pet. Co. and Delmar Oil Co.	2	2,639
Phillips Petroleum Co.	28	2,029
Phillips Pet. Co. and Skelly Oil Co.	141	8,052
Prairie Oil & Gas Co.	90	2,370
Producers & Refiners Corp.	28	835
Roxana Petroleum Corp.	57	1,100
Simons, Moore et al.	29	424
Sinclair Oil & Gas Co.	131	5,249
Skelly Oil Co.	4	1,413
Tidal-Osage Oil Co.	41	1,302
Twin State Oil Co.	8	341
Total	1,053	54,890
Kay County—		
George S. Bole	1	851
Carter Oil Co.	3	2,664
Comar Oil Co.	7	3,076
Cosden Oil & Gas Co.	3	2,667
Gypsy Oil Co.	6	3,427
Laurel Oil & Gas Co.	1	49
Phillips Petroleum Co.	9	6,836
Mid-Kansas Oil & Gas Co.	4	2,741
Pure Oil Co.	1	501
Roxana Petroleum Corp.	1	704
Dye-Tomlinson et al	5	709
Skelly Oil Co. and Phillips Pet. Co.	12	1,614
Sinclair Oil & Gas Co.	1	146
The Texas Co.	1	1,302
Twin State Oil Co.	5	1,933
Total	60	29,220
Total Burbank	1,113	84,110
Total last week	1,113	86,444
Difference	None	2,334

The daily average pipe line runs from the field during the week were as follows: Gulf Pipe Line Co., 17,366 bbls.; Cosden Pipe Line Co., 7,737 bbls.; Kay County Gas Co., 5,316 bbls.; Osage Pipe Line Co., 1,402 bbls.; Oklahoma Pipe Line Co., 12,724 bbls.; Prairie Pipe Line Co., 5,838 bbls.; Sinclair Pipe Line Co., 3,841 bbls.; Moore Refining Co., 2,055 bbls.; Empire Pipe Line Co., 1,056 bbls., Ozark Pipe Line Co., 3,780 bbls.

The amount run to storage by the various companies was: Standish Pipe Line Co., 13,995 bbls.; Mid-Kansas Oil & Gas Co., 4,689 bbls.; Dye-Tomlinson and others, 509 bbls.; Twin State Oil Co., 513 bbls.; George C. Bole, 601 bbls.; Sinclair Oil & Gas Co., 2,688 bbls.

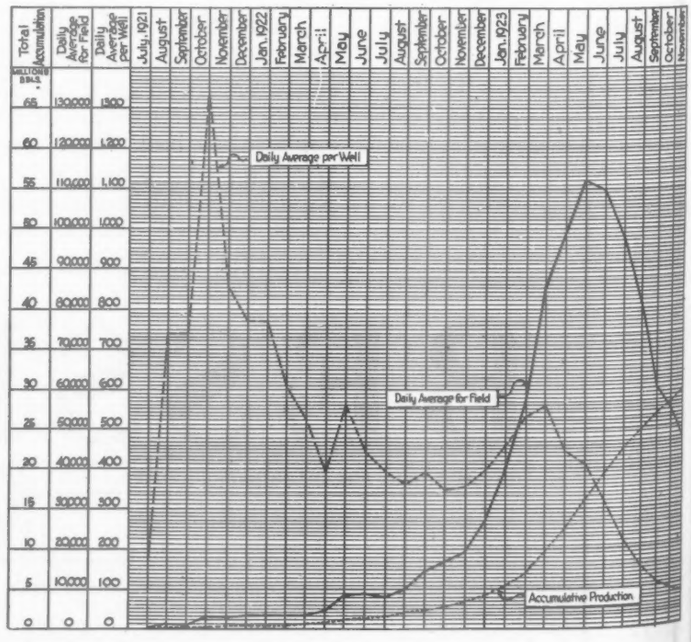
The daily average runs to storage totaled 22,995 bbls., as compared with pipe line runs amounting to a daily average of 61,115 bbls.

Carter County

In Carter County, the Magnolia Petroleum Co. was spudding No. 1 Bohanan, SE cor. NE, Section 19-1s-3w. The Carter Oil Co. and Wirt Franklin's No. 6 Brooks, C SW SE SE, Section 24-

(Continued on Page 100)

THE TONKAWA FIELD



The above chart tells graphically the story of the rise and decline of production in the Tonkawa Field from July, 1921, to the present time

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

INDISPUTABLE EVIDENCE NO. 3

C. L. FREELAND, PRESIDENT
E. H. ROLLESTONE, VICE-PRES'T & TREAS.
A. A. ROLLESTONE, CHAIRMAN OF THE BOARD
G. G. HENDERSON, SECRETARY
J. H. RIGGS, ASS'T SECRETARY

THE ROLAND OIL COMPANY

BRISTOW, OKLAHOMA

July 20, 1923.

Black, Sivalls & Bryson,
Bartlesville, Oklahoma.

Gentlemen:

This is to advise you that your five-hundred barrel vapor pressure flow tank withstood admirably the effects of the fire which destroyed our tank farm in July, 1922.

This tank although in the midst and heart of the fire continued to function although all other tanks caught fire and were totally destroyed.

After seeing this tank performing its work through such conditions our admiration of your product has been increased greatly, and we take pleasure in extending to you our unqualified approval.

Yours very truly,

ROLAND OIL COMPANY,

D M Freeland
Superintendent.

E

"—All other tanks caught fire and were totally destroyed."

One more outstanding feature of Perfection Vapor Pressure Tanks:

They enjoy practical immunity from fire as is evidenced by the testimony of the Roland Oil Company. Fire insurance companies cut the premium to almost nothing.

Only one feature, of course, but when one thinks of evaporation losses made negligible and the fact a battery will pay for itself in a short time, is there any reason for further delay in hunting up our representative in your district?

That day will be a red letter day in your calendar.

Black Sivalls & Bryson
·INC·

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

North-Central Texas Field

By Dan F. Dugan

Ray-Massie-Featherstone's No. 1 Edgbert, Archer County, flows 500 bbls. Foster and others' No. 3-C Shipley, Stephens, makes 360 and Scott and others' No. 1 Davis 310 bbls. Pigg Oil Co.'s No. 17 Hirschi, good for 250 and Gulf Co.'s No. 13 Dale 400 initial. Calmo Co.'s No. 3 Moren, Young County, 200.

FORT WORTH, Tex., Dec. 3.—The daily gain or loss production runs that prevail in the North Central Texas Field each week resulted the past week in a daily increase over the previous one of 3,220 bbls. The increases were credited to the following pools: Stephens County, 820; Eastland, 545, and the wildcat pools and outlying districts increased their previous weeks daily output by 1,685 bbls. Only one loss of any size was made, the Electra Pool decreased its previous week's report 870 bbls. daily, with a total production reported for the week of 115,475 bbls. against 113,255 bbls. daily for the previous week.

This field in a general way produced no "high lights" during the past week. There were no important drilling extensions reported to either the wildcat or proven territories. Drilling development in a way is dragging slowly, with no pretentions made either to start new tests or to complete present drilling wells, and judging from present indications there will not be much of an increase in field work before the balmy spring days.

Eastland County

Some new work may get started in this county during the next few weeks on account of the expiration of leases made for five years time and which expire this fall and winter. There is already some litigation over these leases, fee owners filing suits against the leasing companies holding them, claiming they have not complied with their contracts. Nearly all the land between Eastland and Ranger was under lease by the end of 1918 and most of these leases were for five years. Development work was very active in that part of the field during the boom days but, of course, all the leases were not drilled. In fact, there is a great deal of valuable acreage that will be drilled out when conditions are favorable, but the big companies that own most of this acreage are not inclined to go ahead with a drilling campaign at present. While many of the leases are being renewed, a number are being allowed to lapse.

Some attention has been called to the territory west of Eastland by the Texas Development Co.'s gas well, No. 1 Lewis, which is showing close to 10,000,000 feet daily. The tract lies 3 miles from Eastland and half a mile beyond the present production. It was recently completed in the shallow sand at 1,600 feet and now the gas flow is being mudded off and the well will be drilled to the deep pay. There is a good chance to get production either in the lake sand at 3,200 feet or the Marble Falls formation around 3,500 feet.

Activities in that district opened several weeks ago by Moore and others' No. 2 Ackers producer, continues at a steady stride. Two new wells have been spudded during the week, one by the Junior Oil Co. on the T. C. Thorn farm, a mile southeast of Cross Plains, and the other by C. O. Moore and others on the Acker lease, offsetting on the east the drilling well of T. B. Slick on the Faulkner tract and also offsetting the discovery producer on the north.

C. O. Moore and others' No. 1 Faulkner, a little more than a quarter of a mile southwest of No. 2 Ackers, is reported dry at 2,600 feet, proving, it is believed, that a similar fault exists in the new field to that which outlined the south edge of the Pioneer Pool.

There are around 20 wells drilling in the Eastland Field, and probably as many more have speen spudded in and shut down or drilled to the top of the sand and held there awaiting an improved market.

The next well that probably will be completed in the Eastland Field is Eby and others' No. 5 Miller. This well is drilling around 3,000 feet. The owners expect to complete it within another week. This well is of particular interest as it is an offset to the producer of the El Dorado Oil & Gas Co. on the Bobo tract, which was drilled in three years ago and has made more than $1,000,000 worth of oil. There are now four producing wells on the Miller tract, No. 5 being on the north side.

Young County

Interest in this sector centered on the Calmo Oil Co.'s No. 3 Moran, a semi-completion reported showing 200 bbls. around 2,870 feet at one foot in the pay. When finished it may make a big producer as the Sinclair Oil & Gas Co.'s Moran producer, which it offsets 875 feet to the northwest, same in last February for 800 bbls. and is today gauging 560 bbls.

Sax & Henderson also offset this well to the west with their No. 1 Ribble, which came in more than a year ago for 150 bbls. at 2,800 feet and is still making around 50 bbls. natural.

Of some interest is the Gulf Production Co.'s No. 1-A Hockaday which is being drilled around 4,100 feet. This well directly offsets the Gulf Co.'s famous discovery well, No. 1 Hockaday, which came in last spring. The Ralco Oil Co., another offset, will probably reach the pay this week. These wells, if producers, will bring production within 4 miles of Graham and open up some wonderful possibilities in the deeper pay.

The Shamrock Oil Co.'s No. 1 Bower topped the sand at 2,400 feet. The well is making 1,000,000 feet of wet gas and around 25 bbls. of oil. It looks better than a 100-bbl. producer at completion.

Archer County

This section, with two weeks of rain, mud and impassable roads, got a little sunshine during the week and there was some pretense of resuming active field work, with a net result that a number of good producers and one semi-completion, with production ranging from 50 to 500 bbls. daily, are reported, and several hundred acres of new territory was added to the county's producing areas for future drilling.

The outstanding feature was the near completion by Ray-Massie-Featherstone of their No. 1 Edgbert in Block 694, Geraldine Townsite, with a flush flow of 500 bbls., going on record as the best well completed in the Archer County Field for some time. The top of the pay was picked up at 1,594 feet, which was drilled three feet further, when the well started to flow a solid stream of oil, and in the first 18 hours produced 50 bbls. an hour. The location for No. 2 has been made and drilling will start in a few days.

Another feature was the semi-completion by C. H. Morris of a good producer at 1,600 feet in his No. 1 Garten. The well lies midway between two dry holes and was looked upon as presumed dry territory, it being just 300 feet north of the Mid-Tex's No. 1 Garten and a like distance to the west and north of No. 1 Minchew, both dusters.

Other near completions of importance are The Texas Co.'s No. 8 Carter Brothers, Block 93, drilled in and is showing plenty of oil, with prospects of making a producer at 1,580 feet. Also the 66 Oil Co.'s No. 3 Wilson is showing initial around 200 bbls. at 1,575 feet.

New locations and derricks are King, Hampton & Lewis' test on the J. Ground farm, H. & T. C., Section 20, where they have a derrick built. The 66 Oil Co. is starting two tests on its Wilson ranch lease, Nos. 4 and 2. In Lot 26, of the American Tribune lands, Wilson ranch, Riner & Bailey are starting No. 2 Wilson. The Wilson Oil Co. is moving a rig to offset the Jetter producer on the Wilson ranch.

R. P. Dorain on the Wilson, Block 320, is rigging up and will spud in this week. About 1,000 feet southwest of the Dorian test the Roberts-Hill-McCarty Oil Co. has a derrick erected and is moving in machinery for a test on Block 298, Wilson land.

The Mid-Tex Producing Co. purchased from A. P. Minchew a one-fifth interest in his holdings in the Wilmot and Wilson lands for a reported consideration of $125,000.

Three Good Completions

There was some pleasant weather during the week and field work has increased. Completions were not numerous, but a number of new wells started, including several wildcats that will be watched with interest.

Completions included two good producers at Electra, and one in the Hirschi Field, and two probable producers in the Clara sector. In the Hirschi Field, the Pigg Oil Co. near completed No. 17 in Block 834, for 250 bbls. in the regular 1,800-foot pay, and the Gulf's No. 13 Dale made 400 bbls. initial in the same depth pay. The No. 3 and No. 4 Saunders of John O'Neil in the Clara district are both considered producers, though neither is a full-fledged completion at this time; both are in the 1,815-foot sand. No. 4 looked like a nominal pumper at first, but showed up much better after receiving a 10-quart shot; before a test was concluded after the shot. Caving delayed operations.

The Texhoma Oil & Refining Co. drilled into the sand a few feet in No. 27 lease A. Waggoner, South Electra Pool, and the well is showing up for 150 bbls. daily. The top of the pay was picked up at 1,922 feet.

Howell & Coleman's No. 7 Van Horn, about 3 miles west of Iowa Park on the paved roadway, is reported to have encountered a good looking sand at 1,680 feet, which shows considerable gas.

On the southern edge of Wichita County, not far from the K. M. A. district, the Kentucky Oil Corp.'s wildcat, No. 1 Davis, is estimated as a 50-bbl. producer at 1,321 feet, and furnishes an interesting wildcat development. This well is 12 miles southwest of Wichita Falls, in the center of a section which already has considerable production at various depths ranging down to 1,150 feet. It is reported late in the week to have encountered a salt water flow of some proportions.

The Sunshine Hill district which is seeing a revival of activity after several years of little development, furnished a completion when Kemp & Ferris' No. 5 Eads was completed for 72 bbls. at 977 feet. Baldwin Brothers, drilling No. 12-C Kennedy, southwest of the Eads farm at 1,415 feet picked up a sand that shows oil and the test may make a good producer.

It is reported from Montague County that The Texas Co.'s No. 1-A Gist, 8 miles north of Nocona, is showing for a big gasser at about 800 feet. The well has been running wild since it came in, and it will be some time before it can be placed under control. It is reported to be making 35,000,000 feet of gas per day, estimated.

Completions reported in the Burkburnett and Hirschi Pools are Kemp and others' No. 5 Eads, 72 bbls. at 980 feet; Magnolia Petroleum Co.'s No. 90 Reilly, 20 bbls. at 625 feet; same company's No. 91 Reilly, 5 bbls. at 620 feet; same company's No. 98 Reilly, dry at 2,237 feet; same company's No. 99 Reilly, 8 bbls. at 1,620 feet.

Drilling—Coleman Drilling Co.'s No. 1 Hewitt, drilling in rock, may be abandoned around 1,410 feet; Gulf Production Co.'s No. 14 Dale, set 6⅝-inch casing at 1,800 feet; Langford and others' No. 8 Langford, is drilling, picked up a shale showing some oil at 1,815 feet; McDabb Oil Co.'s No. 2 Potter, pumping at 1,855 feet with no gauge as to amount of production; No. 3 Saunders, testing an oil sand at 1,830 feet; Magnolia Petroleum Co.'s No. 92 Reilly, swabbing 25 bbls. at 530 feet; No. 7 Holtzen, rigging up a machine to drill deeper at 1,805 feet; Northwestern Oil Co.'s No. 1 Eads, rigging to pump and test a sand at 1,470 feet; Perkins and others' No. 1 Saunders, flowing around 160 bbls. from a sand at 1,860 feet; No. 2 Saunders, shut down waiting for cement to set on top of oil sand at 1,830 feet; Sun Oil Co.'s No. 24 Hirschi, standardizing at 1,845 feet; Robinson Oil Co.'s No. 6 Roller, shut down for fuel oil on top of an oil sand at 1,160 feet.

Wichita-Electra

Completions: The Herford Oil Co.'s No. 11 Allingham, 100 bbls. at 1,920 feet; Magnolia Petroleum Co.'s No. 26-A Waggoner, 14 bbls. at 1,575 feet; Texhoma Oil & Refining Co.'s No. 10-F Waggoner, 120 bbls. at 1,930 feet.

Drilling: Buffalo Texas Oil Co.'s No. 4 Douglas, spudding at 40 feet. Holcomb and others' No. 1 Zeiset, shut down and may be abandoned at 1,690 feet.

Kruger and others' No. 7 Kruger has a small show of oil and bailing at 1,595 feet; Magnolia Petroleum Co.'s No. 6 Douglas, rigging to pump and test a sand at 1,030 feet; Memphis Petroleum Co.'s No. 3 Hoanaker, drilling at 805 feet; Rowe Drilling Co.'s No. 1 Waggoner, from a broken sand at 1,660 feet, bailing both oil and water; Texhoma Oil & Refining Co.'s No. 1-J Waggoner, pulling casing to abandon at 2,018 feet; Fisher and others' No. 3-B Fisher, pulling casing and will drill deeper at 1,600 feet; Four States Oil Co.'s No. 7 Jennings, underreaming 10-inch casing at 830 feet; Hartford Trust Co.'s No. 6 Burnett, drilling in brown shale at 715 feet; Magnolia Petroleum Co.'s No. 5-B Waggoner, drilling at 1,425 feet; No. 1 Pere Waggoner, rigging to test a sand at 1,615 feet; No. 1-A Burnett, drilling a lime formation at 1,945 feet; Noel and others' No. 1 Waggoner, shut down for 5½-inch casing with tools still in the hole at 1,950 feet; Panhandle Refining Co.'s No. 1 Marshall, drilling at 1,020 feet; Perkins and others' No. 10 Burnett, drilling at 615 feet; Perkins and others' No. 1 Burnett, drilling in blue shale at 855 feet; Simms Oil Co.'s No. 13 Burnett, will test a sand at 1,535 feet; Carter

(Continued on Page 96)

CLARK
DRILLING ENGINES

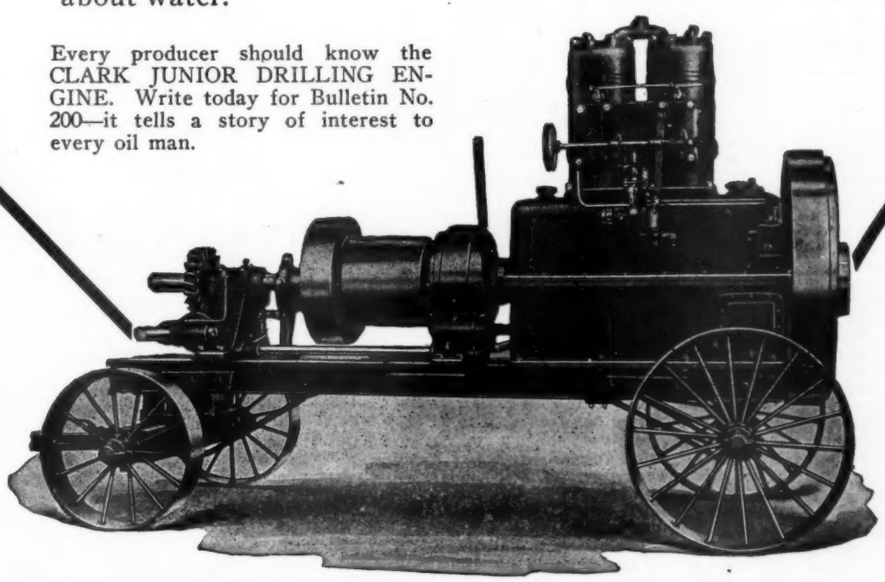
THE CLARK JUNIOR DRILLING ENGINE

PROVEN by long, practical drilling experience in actual field work, it stands today as the most successful and generally liked gas engine offered to the driller or producer. Light in weight—yet strong and durable—easily moved and set up—easily operated.

Will meet all conditions of cable tool drilling to a depth of 4,000 feet.

Exceedingly economical—especially as compared with the steam boiler. It will consume 5,000 cubic feet of gas for 24 hours—compared with 50,000 cubic feet of gas for the steam boiler—a clear saving of 90% on fuel. Consider also the water question—which is serious in many districts—with the CLARK you have no need for worry about water.

Every producer should know the CLARK JUNIOR DRILLING ENGINE. Write today for Bulletin No. 200—it tells a story of interest to every oil man.



CLARK BROTHERS COMPANY

Olean, New York

Manufacturers of Gas Compressors and Drilling Engines

Sales Agents:

GAS ENGINEERING & CONSTRUCTION CO.

405 Kenndy Bldg.
Tulsa, Okla.

Union Bank Building
Pittsburgh, Pa.

208 Consolidated Royalty Bldg.
Casper, Wyoming

East Central Texas

By Staff Correspondent.

Powell averaged 195,811 bbls. a day last week, but started this week at 136,250 bbls. Most of the leases affected by water and many wells have stopped flowing in the heart of the field. Operators have dropped Powell and are actively leasing land in other counties.

CORSICANA, Tex., Dec. 3.—The Powell Field on Sunday, December 2, produced only 136,250 bbls. Seven days before it produced 233,168 bbls. Two weeks previously it was producing about 320,000 bbls.

Such a collapse in production has never been known in any other American oil field. Most of the leases in the field are affected by water, b.s. or both. Wells on leases which a month ago were flowing 20,000 bbls. a day are down to almost nothing, and wells on several very important leases in the past few days have quit flowing and will have to be pumped.

Only six new wells were started in the past week in the entire field and at the close of the week there were 23 derricks up, 43 wells drilliing, 48 wells with casing set and ready to drill in and 6 shut down, a total of 120 operations.

The average production for the week was 195,811 bbls. a day. The production by days follows: Sunday, 233,168 bbls.; Monday, 222,110 bbls.; Tuesday, 211,260 bbls.; Wednesday, 208,300 bbls.; Thursday, 171,172 bbls.; Friday, 168,415 bbls.; Saturday, 156,250 bbls.

Seeking New Fields

The big companies have dropped Powell and sent their lease buyers out into Kaufman, Van Zant, Henderson and Hunt Counties, and a wholesale blocking of acreage in those counties is now on. Leases are being made which require the lessees to begin operations without delay and finish at least one well within 90 days. The Humble Oil & Refining Co. has purchased a one-half interest in the U. S. Tex Oil Co.'s block in the southern part of Kaufman County, paying $150,000 cash and agreeing to drill three wells the first of which is to be completed within 90 days. The Boyd Oil Corp. has a block near Prairieville, Kaufman County, and must have a well down by the first of May. The Humphreys Oil Co. has an interest in this block.

Big things are expected of Kaufman County. It is believed that all the tests drilled there within the past couple of years were on the wrong side of the fault and that there is a great production awaiting the company fortunate enough to hit the right spot.

Northeast of Powell on the so-called Bizette structure Col. A. E. Humphreys and his associates have a block lying along the Balcones fault which they will develop and which its owners believe may result in another Mexia or Powell.

Interest in Powell is dead. The field is definitely on the decline and will soon be reduced to the pump from one end to the other with the companies trying to take care of a serious water situation.

Taking Up Pipe Lines

The Magnolia Petroleum Co., which had four 6-inch pipe lines into the field, has taken up one of them and will take up two more. It was running only 9,000 bbls. a day at the close of the week. All the companies are seeking connections but the oil is not here to meet the demand. The Texas Co. is running only 4,500 bbls. and the Tidal Buttram Oil Co. is running practically all its remaining production to storage.

The Humble Oil & Refining Co.'s production, which was over 120,000 bbls. on the peak day, November 13, was down to 51,000 bbls. on Saturday. The Humphreys Oil Co.'s production had fallen to 11,000 bbls.

The wells on the Texas & Brazos Valley Railroad Co.'s right-of-way have all quit flowing. Yoder and others' No. 1 Harvard quit flowing. The Texas Co.'s No. 1 Fleming, Harris survey, is good for only 200 bbls., 10 per cent b.s. and 10 per cent water.

The Humble Oil & Refining Co.'s No. 1. E. L. Kent was a failure. R. E. Brooks' Nos. 4 and 7 Cerf bailed dry and will be put on the pump for a test. The Gulf Production Co.'s No. 7 Barron would not flow. The Gulf Production Co.'s No. 1 H. B. Boyd had 100 feet of oil in the hole at 2,988 feet. These are recently finished wells and in the heart of the field and they tell the present story of Powell.

Sensational Rise and Fall

The fall of Powell was as sensational as its rise. Never in the history of crude production in this country did any other field develop so rapidly. It took years of work to bring the production of the Cushing Field to its peak. It took six months for Powell to rise from practically nothing to a production that transcended all fields in this country, and then came the beginning of the end. Production toppled at the rate of 10,000 bbls. a day and later it fell even more than that. From 233,168 bbls. on Sunday, November 25, to 168,415 bbls. on November 30, represented an average decline of 12,983 bbls. a day. What will it be by December 31? The Oil and Gas Journal once made the prediction that Powell might not be producing over 50,000 bbls. by the close of the year. A high official of the Humble Oil & Refining Co. about two weeks ago predicted that Powell would be below 100,000 bbls. before New Year's day had rolled around. The turn the field has taken makes the Humble official's prophecy seem absolutely safe, while the earlier prediction of The Oil and Gas Journal, which was made when the field was on its first decline, from which it recovered sensationally, may yet be found to have been not far amiss.

Interesting Comparisons

In this week's review of production by company and lease as of November 25 comparisons are made with the production figures as of November 19 and of November 13, the latter having been the peak day of production in the field. The total production on November 13 was 254,893 bbls. It fell to 288,993 bbls. on November 19, and dropped further to 233,168 bbls. November 25. Four days later it had fallen to 171,172 bbls. and on Friday, November 30, the estimate on the field was 168,250 bbls. In 17 days the output of the field had fallen 186,648 bbls., or over 52 per cent.

The Humble Oil & Refining Co., which was credited with 120,012 bbls on the peak day, was down to 73,682 bbls. on November 25 and down to 51,100 bbls. on Thanskigving day. The Tidal-Buttram Oil Co.'s production of 43,328 bbls. fell to 10,761 bbls. by November 25. Texas Co. production also took a decided drop from 38,397 bbls. on November 13 to 12,648 bbls. on November 25. Garland Kent, who had 8,755 bbls. on November 13 and 10,220 on November 29, produced only 3,312 bbls. on November 25 and the Texas & Brazos Valley gushers fell off rapidly, the company having shown a production on November 13 of 13,970 bbls., which had fallen to 5,302 bbls. on November 25. These were the most pronounced losses in the field. The Gulf Company's production fell from 32,647 bbls. to 24,818 bbls. The Humphreys Oil Co. showed a gain from 12,965 bbls. on November 13 to 15,615 bbls. on November 25. The Skelly Oil Co. by reason of some good wells on its Keith lease, increased from 7,652 bbls. to 11,438 bbls.

The average production of the 523 wells included in the production statement of November 25 was 446 bbls. a day. On November 19 the average was 581 bbls., and on November 13 749 bbls.

The average yesterday of the 550 wells was 248 bbls. a day.

PRODUCTION OF POWELL

Sunday, November 25 and Comparisons With November 19 and November 13

		Nov. 25	Nov. 19	Nov. 13
Humble Oil & Ref. Co.:				
Blumrosen	4	370	428	460
Brown	6	1,370	1,395	1,748
Cerf A	6	2,716	5,493	12,020
Cerf B	1	1,350	2,075	4,190
Crews	9	8,583	9,447	8,030
Davis	15	9,920	17,550	24,400
Fleming A	6	8,545	11,850	17,275
Fleming B	2	325	500	1,329
Gentry A	10	4,160	1,645	1,485
Gentry B	3	430	720	680
Humphreys	22	18,085	21,750	22,630
Irvine A	5	345	315	229
Irvine C	10	815	1,080	1,270
E. L. Kent	2	1,725	590	....
G. Kent	12	1,940	1,125	2,755
R. I. Kent	1	90	....	....
W. J. McKie A	5	156	125	146
W. J. McKie B	10	1,406	882	106
Murchison	3	945	1,425	320
Ramsey A	8	2,866	3,580	6,330
Ramsey B	11	5,066	5,740	8,082
Walker	7	2,474	5,060	6,500
Total	158	73,682	92,775	120,012
Tidal Oil Co. & Buttram Pet. Corp.:				
Crews	7	2,995	10,800	14,865
Phillips	11	3,180	8,200	20,488
Ramsey A	8	3,677	3,932	6,350
Ramsey B	7	857	759	1,465
Thompson	4	52	80	170
Total	37	10,761	23,771	43,328
Gulf Prod. Co.:				
Barron	5	842	775	4,925
Barry	1	....	....	....
Blumrosen	3	180	280	177
Bush	3	1,050	1,045	1,595
Christian	6	387	450	540
Crews	12	18,409	19,400	19,500
Gentry	7	653	665	595
Murchison	8	2,730	2,975	4,325
McKie	1	193	240	160
Smith	5	215	390	400
Witherspoon	8	160	215	310
Total	58	24,818	26,435	32,647
Humphreys Oil Co.:				
Fair	1	25	25	25
Kent	8	420	575	610
R. I. Kent	3	110	77	90
Burke	1	100	42	....
McKie	59	14,855	13,283	12,240
Kenner	1	10	10	....
Springfield	2	95	120	....
Total	75	15,615	14,133	12,965
U. S. Tex. Oil Co.:				
Burke	4	392	383	415
Ramsey	4	68	79	150
Total	8	460	462	565
Skelly Oil Co.:				
Gentry	2	20	25	87
Ramsey	3	261	2,030	2,265
Keith	3	11,157	10,478	5,300
Total	8	11,438	12,533	7,652
Kirby Pet. Co.:				
Fleming	1	2,193	3,560	3,600
Brown	6	598	567	650
McKie	3	2,744	2,432	1,885
Total	10	5,535	6,559	6,035
McMan Oil Co.:				
Chapman	10	1,775	1,827	1,320
Chapman	5	768	942	825
Total	15	2,543	2,769	2,145
Roxana Pet. Corp.:				
Blumrosen	4	106	200	224
McKie	8	501	506	400
McKie A	8	4,181	4,555	4,610
Total	20	4,788	5,261	5,244
E. L. Smith Oil Co.:				
Keith	7	17,968	17,663	16,300
Ramsey	4	500	566	800
Total	11	18,468	18,229	17,100
The Texas Co.:				
Fleming	11	10,417	20,667	34,835
McKie	8	343	324	460
The Texas Co.-Magnolia Pet. Co.:				
Kent	15	1,888	2,175	3,113
Total	34	12,648	23,166	38,397
Atlantic Oil Prod. Co.:				
Irvine	13	1,757	1,700	1,701

(Continued on Page 94)

Kansas Oil Field News

By C. D. Lockwood

Activities in the Kansas fields have not as yet begun to reflect in any appreciable amount, the spirit of optimism that is causing a resumption of drilling in the Oklahoma areas, with the result that little of interest was reported during the last week. The M. M. Valerious Co.'s wildcat test in Russell County, in the SE cor. SW, Section 8-12-15w, which was reported last week as having a hole full of oil at a total depth of 2,965 feet, was drilled a foot deeper without showing any apparent improvement. It was in black shale and lime.

The week ended November 24 showed a loss of 2 locations, 3 rigs, 2 wells drilling and 15 wells shut down, a total loss of 22 operations in comparison with the week before. The total number of operations for the latter week was 199 while there were 221 operations the previous week. The detailed figures for November 24 were as follows: 29 locations, 52 rigs, 48 wells drilling and 70 wells shut down.

In Harvey County, the Derby Oil Co. was spudding No. 1, SE cor. NW NE, Section 4-23-2. Timbers were on the ground for the S. S. Oil Co.'s No. 1 Kierbeil, SW cor. NW, 2-23-2e, and a rig was in place for the Newton Oil Corp.'s No. 2 Wetschenski, C SE SW NE, Section 4-23-2e.

Duquett and others' No. 1 Thames, C SW SW SE, Section 20-22-2e was spudded and shut down, and Mason and others were spudding their No. 1 Hawk, C NW NW SE, Section 4-23-2e.

Butler County

In Butler County, Elwell and others were drilling at 700 feet in their No. 6-A Rence, NE cor. NW SE, Section 27-28-5, which is a twin to a lost hole 30 feet to the west. The S. S. Oil Co. was setting the 10-inch casing in its well on the Craig farm, SW cor. Section 22-28-5e, and the Empire Gas & Fuel Co.'s No. 2 Clark, C SW NE NW, Section 20-27-6, was shut down at 2,690 feet.

Sand containing a show of oil was found at 3,145 feet in George Neiman's No. 1 McLean, C NW NE NW, Section 30-28-6, and the 5-inch casing was being underreamed at that depth. Tobin and others shut down their No. 1 Lammonyon, SW cor. NE, Section 12-29-6e, at 1,500 feet. Moyer and others were having pipe trouble at 2,818 feet in their No. 1 Hazlett, SW cor. Section 12-23-7e.

In Sedgwick County, J. B. Regal and others were cleaning out their No. 1 Alley, C NE NE NE, Section 26-26-1w.

In Kingman County, D. P. Fleeger and others shut down their No. 1 Sheldon, CWL NE SE NE, Section 20-27-7w, at 1,410 feet.

The Watchorn Oil & Gas Co. had a

(Continued on Page 94)

A Story of Oil Field Supply Quality and Service ~ told in Trade-marks!

DARLING
GATE VALVES
FITTINGS
TRIMO TOOLS
MOON LIGHTING OUTFITS
DARCOVA VALVE CUP
OKLAHOMA IRON WORKS TULSA, OKLA.
INTERNATIONAL SUPPLY COMPANY ISC
THE FOOS ENGINE
REX CHAIN
LIMESTONE PULLEYS
"IT'S A WILSON"
KEWANEE Oil Country Boilers
Everything for the Oil Field
Simplex Jacks
DODGE
DURNELL UNDERPULL
KV
OIL WELL DUNN TOOLS
CHESTER
YALE

INTERNATIONAL SUPPLY CO.

Branch stores in 18 of the leading oil field towns in Oklahoma, Kansas, Wyoming and Montana.

General Offices and Works
Tulsa, Okla.
District Offices: Denver, Colorado and Fort Worth, Texas

Gulf Coast Oil Operations

By P. L. McGreal

Houston Oil Co. gets 50,000,000 gasser in No. 3 Cartright, Live Oak County. United North & South Co.'s No. 4 W. F. Mercer flowing 400 bbls. by heads, Luling. Magnolia Petroleum Co.'s No. 6 Merriweather, good for 700 bbls. New sand found in Orange Pool.

HOUSTON, Tex., Dec. 3.—The estimated daily average gross production of the Gulf Coast pools and the light gravity fields to the southwest, is placed at 95,277 bbls. for the week, an increase of 379 bbls. over the estimate for the previous week. The estimate for the Gulf Coast pools alone is 88,782 bbls., against 88,338 bbls. last week, the increase in the Orange Pool being offset by a decline in the output of the Hull Pool. The estimate for the Luling Field is 8,600 bbls., which is not included in the total.

The figures for each district are as follows:

District—	Bbls.
Batson	1,145
Blue Ridge	730
Barber Hill	345
Dayton	60
Damon Mound	1,885
Edgerly	440
Goose Creek	13,375
Humble	5,475
Hull	18,900
Jennings	725
Markham	105
Orange	16,770
Pierce Junction	760
Spindletop	825
Saratoga	1,790
Sour Lake	5,022
Somerset and Piedras Pintas	3,020
Vinton	5,870
Welsh and Anse La Bute	90
West Columbia	14,270
Miscellaneous	3,675
Total	95,277

Coastal Stocks

Gross stock of Coastal crude in steel and earthen storage is estimated at 18,080,000 bbls., an increase of approximately 460,000 bbls. for a 30-day period. Of the gross amount, the stocks of Class "A" are estimated at from 11,000,000 to 12,000,000, the balance of the gross amount being classed as "B," which contains sulphur, or is light gravity suitable for fuel oil only or crude that cannot be treated. Class "A" is the crude used for the manufacture of lubricating stocks. The stocks of Grade "A" are not considered unusually heavy.

Contractors are now returning from the Powell Field, where their rigs have been in service and these men are looking around for opportunities to get back into the pools. A betterment in prices will be followed by drilling around partially defined domes and a hunt for new ones. With two or three exceptions the older pools have been defined so far as area is concerned, but price improvement would result in a search for deeper sands there.

Big Gas Well

The Houston Oil Co.'s No. 3 Cartwright in Live Oak County is a gasser, estimated at 50,000,000 feet at 2,390 feet. It blew in Thursday morning, the bit going into the sand after drilling through 700 feet of tough gumbo. It is a dry gas. The well is shut in and under control, with a 10-inch master valve weighing 3,500 pounds and heavy triple hydraulic blow-out preventer. Four strata of gas were found in this well, the first at 910 feet, which was cased off; the second at 1,560 feet and the third at 1,650 feet. It is the third test drilled by the company on a lease of 27,000 acres. No. 1 got gas at 900 feet, but the hole choked and was lost. No. 2 was abandoned at 1,200 feet, 200 feet south from No. 1. No. 3 is 250 feet north and west from No. 1.

The district about Three Rivers in Live Oak County and the Grubstake section in McMullen County have long been known as a gas district with some shallow oil wells. The gas is piped to San Antonio by the Southern Natural Gas Co. The districts are about 85 miles south of that city.

Recently leasers have been active in both counties. In McMullen County, Laughter and Napier's No. 1 Callihan, Block No. 16, is making 2,000,000 feet of gas at 774 feet, which has been connected with the 12-inch main to San Antonio. Glover and Davis' No. 2 Callihan, which was brought in by the Grubstake Investment Co. and subsequently subleased to Glover & Davis, together with No. 2 Stitz, is reported pumping 440 bbls. at 747 feet. It is the discovery well. No. 2 Stitz, 200 feet west, is reported flowing 100 bbls. by heads at 740 feet. The South Texas Oil Co. has two wells on the Cox land and is rigging No. 1 H. T. Callihan, Block No. 2. Its No. 1 Cox is rated at 125 bbls. at 771 feet and No. 2 Cox 150 bbls. at 768 feet. The company has 150 acres in the field. The Frio Oil Co. is preparing to put No. 1 Cox on the pump at 763 feet and No. 1 Callihan at 715 feet.

Wells drilling in the Grubstake Field include the following: Lightfoot and others' No. 1 Stitz at 752 feet in gumbo and No. 1 Aycock, drilling at 1,502 feet in shale. It will be a deep test. The Allen Oil Co.'s No. 1 Stitz is rigging. Bower and others' No. 1 Fisher, Block No. 17, has set and cemented casing at 641 feet. A. L. Thirman's No. 1 Callihan, near Callihan Townsite, is shut down at 857 feet to repair the rig. The San Belt Petroleum Co.'s No. 3 Stitz, Block No. 46, is in rock at 410 feet. Its No. 2 Stitz is in gumbo at 596 feet, 400 feet from No. 1 Stitz, making 100 bbls. per day. T. H. Foley has a derrick up for No. 1 Callihan, Block No. 6 and Everett and others' No. 1 Stitz, Block No. 63, is rigging. The Grubstake Investment Association has a derrick standing for No. 4 Lark.

In Live Oak County, the Lobo Oil Co.'s No. 6 Reagan is drilling around 1,006 feet and the Karkey Oil Co.'s No. 1 Herring below 775 feet. McCoy and others' has a location for No. 1 Murray and the Grubstake Investment Co. has derricks for No. 2 Brown and No. 2 Nichols.

Medina County

Medina County is also coming in for a share of attention since the Ina Oil Co. developed a small pumper at a shallow depth. It is on the Durst Ranch and rated at 25 bbls. per day. No. 2 also showed for a well, but is being drilled deeper at 965 feet. Two showings will be tested out during this week. Wolfe and others' set and cemented casing in No. 1 Moefield and will drill in to the sand. The McBride Drilling Co.'s No. 1 Adams is setting casing at 945 feet and will test. Fritz Fuchs is drilling No. 1 Rogers at 235 feet and is starting a 2,000-foot hole on the Weimers Ranch, 3½ miles south of the Ina Oil Co.'s pumper. The Williams Oil Co. is rigging No. 1 Mobius, 2½ miles northwest of the Ina Co.'s well, using cable tools. Carl and others' No. 1 Durst is below 800 feet. Sherman & Haught's No. 1, Survey No. 459, is drilling below 565 feet and the J. C. K. Oil Co.'s No. 1 Adams is around 345 feet. Young and others' No. 1 Bendle is below 600 feet. Smith and Donaldson's No. 1 Wilson is shut down at 790 feet. The California-Medina Oil Association's No. 1 Rothe is fishing at 2,000 feet. Derricks are up for Metzer and others' No. 1 Ward and O'Bryan's No. 1 Wilson. Doctor Brown's No. 1 Adams is drilling below 350 feet.

Luling Field

The United North and South Oil Co.'s No. 4 W. F. Mercer is making 400 bbls. by heads in the Luling Field and the Magnolia Petroleum Co.'s No. 6 Merriweather is a 700-bbl. well. Both are in the old district. The Jarmon Oil Co.'s No. 2 Moore is drilling in. Its No. 1 Moore extended the field to the south last month. The Big Gusher Oil Co. may try shooting in hard lime, said to be similar to the Ranger formation. It is east of production. The lime was found at 2,425 feet.

Duggan and others cored 30 feet of sand showing light gravity oil at 2,040 feet and are now preparing to drill in. It is 2½ miles northeast from the four other light gravity wells in the Mirando City-Schott district, where the sands were found from 1,940 to 2,000 feet. If a well is developed it means that other companies will deepen their wells and test out the intervening territory. The Caroline-Texas Oil Co.'s No. 5 Barnsley is a 20,000,000-foot gasser at 3,004 feet. The Cole Petroleum Co.'s No. 3 Cole, 1 mile north of Bruni, is showing some oil and gas at 3,568 feet. It is the deepest test in the county.

In the Schott district, the Magnolia Petroleum Co.'s No. 16 is making 100 bbls. at 1,678 feet and Allsworth Bros. No. 1 fee is good for 100 bbls. initial at 1,690 feet.

The Misko refinery in the field is installing a gasoline plant to run on the 45 gravity crude from the 1,940-2,000-foot sands.

Gulf Coast Pools

In the Orange Pool, the Sun Oil Co.'s No. 2 Brown, which came in last week flowing 3,500 bbls. through two chokers at 4,560 feet after setting screen in 120 feet of sand, is now making 2,950 bbls. showing 8 per cent sediment and water. It extended the pool three-fourths of a mile to the southeast and found a new sand. The Brownie Babbittee Oil Co. is rigging No. 1 Brown on the north as an offset and the Gulf Production Co. is offsetting to the west with No. 5 Peveto and deepening No. 3 Peveto to try for the same sand. The Supreme Oil Co.'s No. 1 Jackson, 1 mile north, is preparing to test at 4,400 feet, after deepening. In addition the Gulf Co. is rigging No. 6-A Kishi-Lang on the northwest side of the pool for a deep test. Its No. 4 Chesson is bailing at 3,350 feet. No. 13 Hager Fee on the east side of Cow Bayou is drilling at 3,154 feet and No. 14 at 2,135 feet. The Humble Oil & Refining Co. is setting liner in No. 3 Chesson at 4,200 feet. On the north side, the Mutual Oil Co.'s No. 6 Chesson is setting strainer at 3,350 feet and deepening No. 8 at 4,290 feet. The Rycade Oil Co.'s No. 3-A State land is deepening at 4,400 feet. Northeast of production, the Sun Oil Co.'s No. 1 Kato is deepening at 3,550 feet and 1 mile in the same direction from production the American National Oil Co.'s No. 1 Winifree is deepening at 3,724 feet.

In the Hull Pool, on the northwest side of the dome, the Higgins Fuel Oil Co.'s No. 1 Merchant is flowing 300 bbls. by heads at 2,775 feet. The Yount-Lee Oil Co.'s No. 3 Taylor is drilling at 2,980 feet and No. 4 is rigging. No. 8 Merchant is sidetracking. The Houston Production Co.'s No. 7 Taylor is at 1,980 feet and the Link Oil Co.'s No. 4 Rivere below 3,450 feet. The Mecom Oil Co.'s No. 3 Mecom is working over at 3,500 feet. The Monarch Oil & Refining Co.'s No. 3 Miller is drilling below 2,665 feet and the Gulf Production Co.'s No. 5 Harrison Fee is drilling around 2,600 feet. The Humble Oil & Refining Co. is rigging No. 1 Taylor and No. 1 Sterling. On the southwest side of the dome, The Texas Co. and Vacuum Oil Co.'s joint No. 1 Hannah is sidetracking at 2,675 feet.

On the east side of the hill, the Repub-

(Continued on Page 112)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., Nov. 29.—The best completion in Mexican fields during the past few days is Rich Mex Oil Co.'s No. 22, Lot 1, fraction 4-B, in the Cacalilao sector of the Panuco Field, which came in conservatively rated at 15,000 bbls. The depth of the well is 2,060 feet. This well is the fourth producer of considerable size that has been brought in in this lot, which looked for a while as if it would prove a disappointment. While carried as Rich Mex No. 22, it was drilled in by the Doctor Turner interests, de facto, so to speak; and in coming in a good producer bears out the adage that persistence is worth while, for Doctor Turner, well known in Texas and Oklahoma, and an old resident of Tampico, has been, petrolifically speaking, noted for drilling failures in the Panuco Field since as far back as 1915.

Cacalilao witnessed some other good completions as well as some dry holes the past 10 days. Mexican Sinclair Petroleum Corp.'s No. 28, Lot 3, is a nice completion at 1,500 feet, rated 5,000 bbls. International Petroleum Co.'s No. 45, Lot 4, is a 4,000-bbl. well at 1,917 feet; but it has a failure in its No. 40, Lot 5, which is a dry hole at 2,552 feet. Kone & Willis, No. 3, Lot 1 Cacalilao, (2-C), is a 200-bbl. well at 2,250 feet. Transcontinental Petroleum Co.'s completions during the week were not so happy, both No. 29 and No. 37, in Lot 4, being failures at 2,050 feet and 2,100 feet, respectively. La Corona Petroleum Co. also added to its production in Cacalilao by bringing in its No. 41, Lot 4, which is rated at 7,000 bbls. at 2,009 feet.

In the older sectors of the Panuco Pool, the best completion noted is Sol Oil Co.'s No. 1 Tranchisol, a federal zone well, which, at 2,025 feet, is rated at 2,500 bbls. What promised for a day or two to be a real well was New England Fuel Oil Co.'s No. 12 San Manuel, which,

t (Continued on Page 116)

Conclusive Evidence

REPEAT orders for Chicago Pneumatic Portable Oil-Powered Compressors give conclusive evidence of a low operating cost and reliable service performance. Users who bought their large capacity CP Portable Compressors years ago invariably specify Chicago Pneumatic when their air-power requirements increase.

One prominent construction company of Pittsburgh, Pa., has a fleet of thirty-six.

An Illinois bridge and tank builder depends upon twenty-two for compressed air needs.

A third user operates nineteen CP Portable Oil-Powered Compressors.

Other well known organizations in the contracting field have from four to fourteen in service.

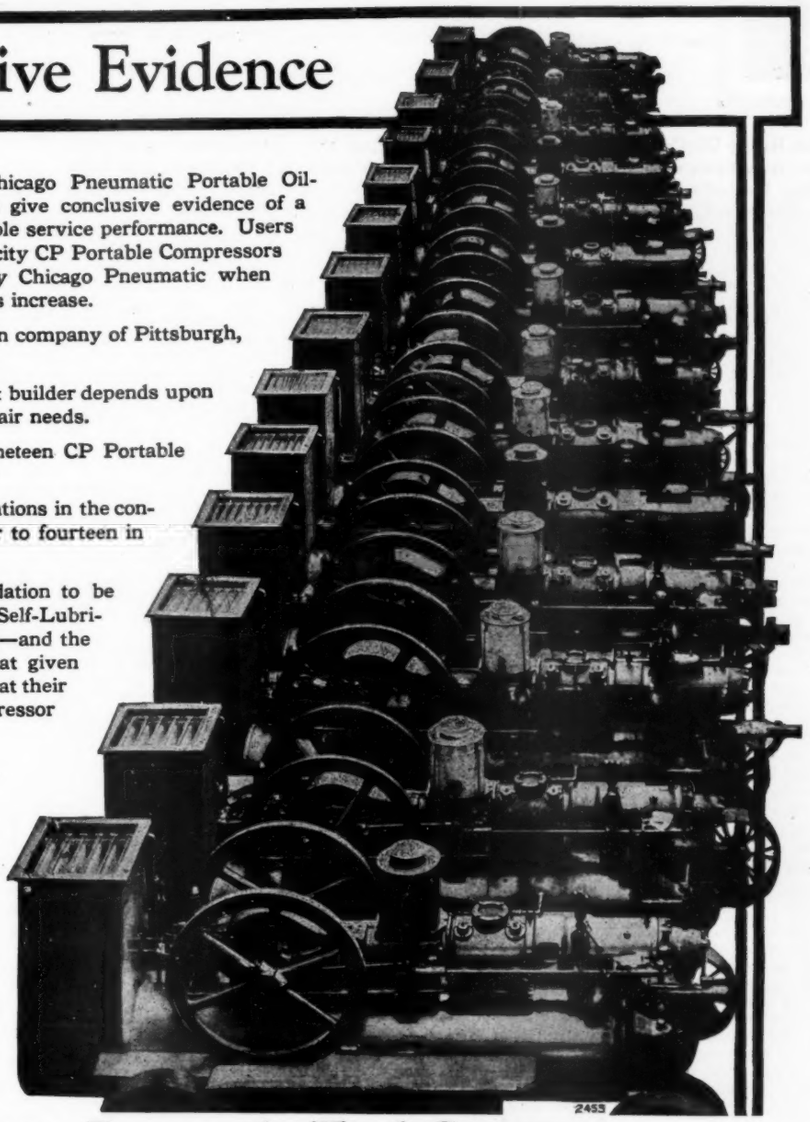
The strongest recommendation to be offered for Simplate Valves, Self-Lubrication, Automatic Unloading—and the complete compressor—is that given by these companies who repeat their orders when additional compressor equipment is needed.

Request Bulletin 607.

This Company Purchased

Fourteen

Compressors	Date Bought
1	9- 6-12
1	9-12-12
1	9-17-12
1	12- 5-12
1	3- 6-19
2	3-10-19
2	7-30-19
1	7-31-19
2	8- 4-19
2	8- 8-23
14	



Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

*Birmingham	*Cleveland	Houston	*New York	Salt Lake City	Tulsa	*Buenos Aires	Dairen	Johannesburg	Milan	Paris	*Sao Paulo	Tokyo	
*Boston	Denver	*Los Angeles	*Philadelphia	*San Francisco	Berlin	Calcutta	Havana	Kobe	*Montevideo	*Rio de Janeiro	Seoul	*Toronto	
*Chicago	*Detroit	*Minneapolis	*Pittsburgh	*Seattle	Bombay	Christiania	Helsingfors	London	Montreal	Rotterdam	Shanghai	*Vancouver	
*Cincinnati	El Paso	*New Orleans	Richmond	*St Louis	Brussels	Durban	Honolulu	Manila	Osaka	Santiago	Tampico	*Winnipeg	

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
Consolidated Pneumatic Tool Company, Ltd., London, manufacturers of Chicago Pneumatic products in England

C-148

BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS
GIANT OIL AND GAS ENGINES ROCK DRILLS · · COAL DRILLS

CHICAGO PNEUMATIC

The Compressor with the Simplate Valve

California Field Operations

By L. P. Stockman

Oak Ridge Oil Co.'s wildcat near Bandini Station, No. 1 Rossi, reports oil sand that may open new territory. Shell's No. 1 Hughes, Long Beach, makes 2,400 bbls.; United's No. 4 Haas, 2,100. Petroleum Midway's No. 1 Mattern, Santa Fe Springs, 2,250. Few new wells at Torrance produce 6,750 bbls.

LOS ANGELES, Cal., Dec. 1.—Probably the most important development during the week was the testing out of the Oak Ridge Oil Co.'s No. 1 Rossi. This well, a wildcat being drilled in the vicinity of Bandini Station, has been drilled to 4,656 feet and a string of 6¼-inch casing cemented at 4,638 feet. The company claims to have run into a nice oil sand at 4,650 feet and accordingly backed up and cemented above it. A core sample taken some time ago at 4,652 feet revealed what is said to be the nicest oil sand seen in a wildcat in southern California for some time. When the cement was drilled out, it was found that a water shutoff had not been secured. There were quite a number of scouts and operators present when the test was made and to say that the result was a keen disappointment is to put it mildly. This well is of particular importance at this time because if it should result in commercial production another new producing area will be opened up, which would undoubtedly delay the return to normalcy of the industry in the State.

In addition to this well, which has been drilling for a year or more, the Oak Ridge Oil Co. also drilled a wildcat near Compton, recently opened up by the Union Oil Co. The former Compton wildcat was only about 3 miles away from the Union's discovery well and it may be possible that the company has struck it lucky this time.

The Oak Ridge Oil Co.'s Bandini wildcat is just far enough away from Santa Fe Springs to find another structure and it is the consensus of opinion that of the several wells drilling in this vicinity, it is the most favorably located. The well has been cemented and those who leased acreage in the immediate vicinity of the well a year or so ago are looking forward to the next test to be made some time during the next two weeks. The officials of the company were so confident a good well would be brought in they secured and erected two 5,000-barrel steel tanks to take care of production. The Fullerton Oil Co.'s No. 1 Simons, which is drilling approximately 2 miles away, is standing cemented at 5,436 feet. This latter well showed several colorings and a little gas around the 4,800-foot mark, although it appears to be too far to the northwest to be on the same structure with the Oak Ridge Oil Co.'s well.

To Deepen Wildcat

When the Dolke-Thomas Syndicate suspended drilling its Coyote Hills wildcat a few months ago at 4,000 feet many operators did not believe that the area had been thoroughly tested. It is reported during the week that the Russell Petroleum Co. has purchased a half interest in this wildcat and will carry it down to 5,000 feet in an effort to secure production. Rotary equipment is being installed and drilling will be well under way within a short time.

Over in the Newport district, the Newport Oil & Refining Co. is still working with its No. 2, which was put on a production test a few weeks ago after being drilled to 1,071 feet. It is reported that the well pumped 10 bbls. an hour of 10.5 gravity oil for a limited time. The well created a good deal of interest when put on the pump but this low gravity oil is so heavy that it can be used only for fuel oil or road building. The presence of this heavy oil between 900 and 1,000 feet has been known for many years and several previous attempts have been made to extract it. The deposit is more of a tar than an oil sand and in one or two instances attempts were made to stimulate production by heating it with steam coils. It was found, however, that this process was too expensive. The recent production of the Newport Oil & Refining Co.'s No. 2, although it was only a very small amount, will probably result in the drilling of one or two more wells to test this sand. There have been several deep tests made, the Interstate Oil Co.'s No. 1 Mesa being drilled to 3,350 feet, while the same company's No. 1 Norris, now standing idle, was carried down to 3,145 feet. In addition, the Newport Petroleum Corp. carried its No. 1 down to 4,260 feet in an effort to develop production.

In the Puente Hills district, the Rancho de la Puente Oil Co. encountered a quantity of strong sulphur water in its wildcat well just being started. The flow was struck around the 100-foot level and the sulphur was so strong work on the rig was temporarily suspended. None of the other companies wildcatting in this district report any unusual developments during the week.

The Arcadia Oil Co., which spudded in a wildcat well in the Montebello district some three years or so ago, in the extreme northeastern part of the field, will put it on a production test around 4,400 feet. This well does not look very promising but the company reports a slight showing around 4,370 feet. The Snowolene Oil Co.'s Jacalitas Dome wildcat near Coalinga is standing cemented at 3,645 feet and the result of this test will not be determined until after the close of the year.

Long Beach

Frequent completions are necessary to keep up production at Long Beach. The Shell Oil Co. carried off completion honors by bringing in two wells and recompleting another with an aggregate initial daily output of 3,645 barrels. The largest of the company's new wells was No. 1 Hughes, brought in from 5,001 feet, doing 2,400 bbls. a day. Number 9 Alamitos, the other completion of the Shell Oil Co., was put on a test at 4,180 feet and registered a production of a little better than 1,100 bbls. a day. The output from No. 1 Hughes is clean and tests 26.4 degrees, while the production from No. 9 Alamitos tests 25.3 degrees and shows a cut of 2 per cent. The company's rejuvenated well was No. 1 Marcellus, redrilled and deepened from 3,310 feet, its former production depth, to 4,119 feet. Upon being returned to production the well was good for 145 bbls. a day. It is pumping 23.2 gravity oil with a cut of 2½ per cent.

Number 4 Haas, the United Oil Co.'s contribution to the field's list of producers, was put on a production test after being drilled to 5,058 feet and showed an initial output of 2,100 bbls. a day. The oil from this well, which tests 26.3 degrees and shows a cut of 1 per cent, is flowing through a ¾-inch bean under a pressure of 275 pounds. The United's No. 1 Bixby, which has been flowing a small amount of oil by heads for some time, has been deepened a little and will be put on a production test within two weeks, a string of 6¼-inch casing being set at 4,785 feet.

There were several small wells brought in during the week, the smallest being No. 3-B Special Delivery of the Bay Hills Oil Co., completed several weeks ago after being drilled to 3,634 feet, but the company has been unable to secure clean production. In addition to a small output, 250 bbls. daily, the quality of the oil is also disappointing. The production from this well tests only 17.1 degrees and shows a cut of 45 per cent, rendering it practically unsalable. The Petroleum Midway (California Petroleum) was not successful in putting No. 1 Ella Clark on production during the week after completing it at 4,375 feet as it did not have sufficient kick to flow. It has been found necessary, therefore, to put it on the beam, and when finally brought in it will undoubtedly be only a small pumper.

The sudden drop in the number of completions at Long Beach was a little unexpected, but it sometimes happens that several days pass with no completions recorded. Heretofore, a period devoid of completions has nearly always been followed by one with an unusually large number of completions, which brings the general average up. Since there were only a few completions recorded during the past few days there will probably be 8 or 10 reported during the coming week. During the next few days the Dabney-Delaney well No. 1 will probably be put on production as preparations are being made to bring it in. It was finished with a 4½-inch oil string at 4,500 feet and as soon as the necessary tankage has been erected the well will be turned loose. In addition to this well, the Shell Oil Co., the largest operator in the field, should also complete a producer, its next well looking like No. 1 Wells. The company's daily production in this field is slightly under 50,000 bbls. a day and another fair producer will boost the company's production well over this figure.

Santa Fe Springs

The General Petroleum Co. brought in three wells at Santa Fe Springs during the week, making a total of nine wells completed during the past six weeks. The company increased its production 2,500 bbls. a day by completing these three wells, all on the Santa Fe lease. Two, however, were comparatively small. The company's smallest well was No. 11, brought in as a pumper doing 350 bbls. a day of 33.2 gravity oil with a cut of 3 per cent from 4,650 feet. Number 86-B on the same lease was also a small well, its maximum production being 550 bbls. a day. It was completed with a 4¾-inch oil string set at 4,620 feet and the oil, which tests 32.7 degrees, shows a cut of 1½ per cent. The company's largest new well was No. 43 Santa Fe, which was put on a production test after being completed at 4,687 feet. It was finished with a 4½-inch oil string landed at 4,697 feet and it is doing 1,600 bbls. a day of clean 33.6 gravity oil. The well is flowing through a ⅞-inch bean under a pressure of 200 pounds. It was expected that No. 1-A Santa Fe would be put on production during the current week, but their completion was temporarily held up and they will probably be brought in within a few days. In addition, there is a possibility of the company's completing No. 45 Santa Fe, drilling in an oil sand at 3,845 feet. Should the company decide to bring this well in at this depth it will be the first completion in the Bell zone for some little time.

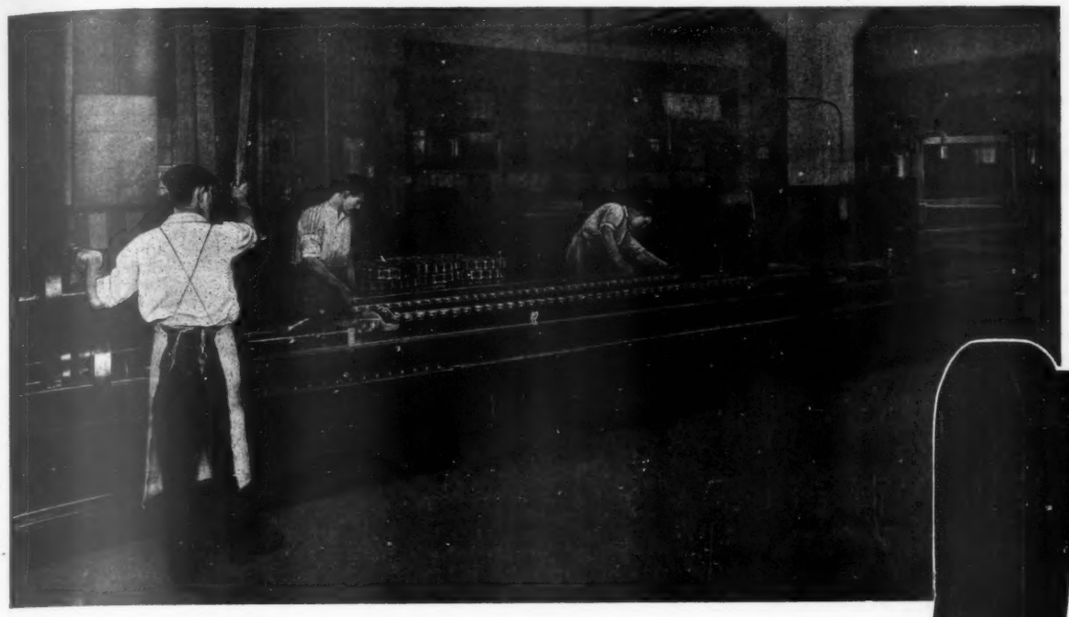
The Petroleum Midway Co. (California Petroleum) followed the General Petroleum with two new wells adding 2,075 bbls. a day to its production. The company's two new producers were well No. 1 on Mattern lease No. 1 and No. 8 Pat-

(Continued on Page 120)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Birkenhead, November 19, Philadelphia, crude	74,000
K. R. Kingsbury, November 19, New York, crude	84,000
Standard, November 19, New York, crude	116,000
D. G. Scofield, November 19, New York, crude	76,000
Hugoton, November 20, New York, crude	75,000
Gulf Queen, November 20, Philadelphia, crude	74,000
W. F. Burdell, November 20, Philadelphia, crude	73,000
Agwibay, November 20, Baltimore, crude	86,000
Fred W. Weller, November 20, New York, crude	118,000
F. Q. Barstow, November 21, New York crude	110,000
Tulsagas, November 21, Fall River, crude	75,000
E. L. Doheny, Jr., November 21, New Orleans crude	90,000
W. E. Hutton, November 21, Philadelphia, crude	73,000
Utacarbon, November 22, New York, crude	75,000
Cathwood, November 23, Baltimore, crude	75,000
Wm. G. Warden, November 23, New York, crude	108,000
Cecil County, November 24, Fall River, crude	75,000
Argon, November 25, New York, crude	76,000
Wm. Green, November 25, New Orleans, crude	74,000
Coastwise	
Lubrico, November 19, Richmond, crude	78,000
U. S. Tanker Ramapo, November 19, San Diego, fuel	75,000
Paul Shoup, November 20, Avon, crude	78,000
La Placentia, November 20, Martinez, crude	76,000
R. J. Hanna, November 22, Richmond, crude	80,000
S. C. T. Dodd, November 22, Richmond, crude	81,000
Coalinga, November 22, Port Moody, fuel	25,000
Deroche, November 22, Martinez, crude	76,000
Lubrico, November 23, Richmond, crude	80,000
La Purisima, November 24, San Diego, refined	10,000
Los Angeles, November 25, Martinez, crude	74,000
La Placentia, November 25, Martinez, crude	77,000
Exports	
Ondo (Jap), November 24, Japan, fuel	55,000
Tejon, November 24, Japan, fuel	70,000
Tachibana Maru (Jap), November 24, Japan, fuel	60,000
Strombus (Br.), November 25, Balboa, fuel	69,000
From San Francisco	
Montebello, November 18, Victoria, fuel	70,000
J. A. Moffett, November 19, Astoria, fuel	63,000
China Arrow, November 19, Calcutta, gasoline	96,000
Richmond, November 20, Point Wells, fuel	64,000
F. H. Hillman, November 20, Point Wells, refined	25,000
San Patricio, November 21, Valparaiso, fuel	60,000
Charlie Watson, November 21, Seattle, refined	12,000
Liebre, November 22, Portland, fuel	63,000
Lebec, November 22, Portland, fuel	55,000
Atlas, November 23, Aberdeen, refined	14,000
Col. E. L. Drake, November 24, Balboa, refined	35,000
Tuscaloosa, November 25, Singapore, kerosene	62,000
From Port San Luis	
Coalinga, November 19, Oleum, crude	70,000
From Monterey	
Kewanee, November 25, Seattle, refined	25,000



Why You Should Use Link-Belt Chains

NOT only are Link-Belt Chains correctly designed and carefully built—by skilled chain makers—in the largest and best equipped chain making plant in the world, with every modern facility to secure perfection, but—

Every part of the chain—the sidebars—the rollers—the pins—the bushings—has been accurately determined by our experienced designing engineers, to give the greatest service. More than 40 years of experience in chain-making is back of these chains.

The best of everything goes into Link-Belt SS-40 and SS-124 chains—.40 carbon steel sidebars, case-hardened steel pins and bushings, and the famous Link-Belt chrome nickel steel "Curled" roller—which cannot be broken in service.

Not a link leaves the Link-Belt works until it is inspected for accuracy and strength. The illustration shows one of many machines used in testing the strength of SS-40 and SS-124 and measuring its length.

SS-40 and SS-124 are worthy of the Link-Belt Chain mark >——< of quality, which is stamped on every link.

LINK-BELT COMPANY, INDIANAPOLIS

World's largest manufacturers of Elevating, Conveying and Power Transmission Machinery

SS LINK-BELT SS 40 SPROCKET CHAIN 124

Fields of the Central West

By Whit

Activity in new Richland-Huron gas field, which now has 28 producing wells, three, just in, million feet each. Ohio Oil Co. gets best oil well of week, No. 1 W. M. Orr, Wayne County, good for 100 bbls. Owsley County, Ky., develops gas field. Indian-Tex Co. has two producers in North Weir Field.

MANSFIELD, Ohio, Dec. 3.—The closing week of November shows very few completions from the Central West Field outside of the Central Ohio Field, where the gas companies are holding an active drilling campaign. At the same time the oil operator is looking for the pools that will produce oil from the Berea sand along the old gas area. The newest gas field, along the Richland-Huron County line in the northern part of the Central Ohio Field, known as the Mansfield-Shiloh gas field, continues to show 100 per cent perfect, three new gas wells coming in during the past few days, making 28 producing gas wells. George S. Lacknett, a Pittsburgh operator, surprised the talent by bringing in his No. 2 Gilger farm, just across the Richland County line in Ripley Township, Huron County, for 1,000,000 feet, at a depth of 460 feet in the shale. This well showed an enormous rock pressure for this depth and the well was tubed and turned into the gas line. Cupples & Ozier, Akron, Ohio parties, drilled in a nice well, making better than a million feet in No. 1 Barnes, Section 2, Cass Township, Richland County. This well proves up considerable territory to the west of the main pool. George Van Tilburg has a 1,000,000-foot well on the Porter 7 acres, Section 1, same township. Two dry holes were reported, both about 3 miles south of the main pool, that of Mitchart & Noah, in No. 1 Boyd Hammon, and J. Wiltz' No. 1 A. F. Kinsel, both being in Section 13, Cass Township, Richland County.

One of the major gas companies has had two of its best geologists in the Mansfield-Shiloh for the past 10 days. These parties claim that the main structure separates at the cemetery, in the southeast corner of Section 1, Cass Township, and continues all the way to the village of Rome to the southeast, and that the other branch runs to the village of Shiloh and winds around to the south of Plymouth. It is also stated on good authority that one of the large gas companies will take over the Zellers well at Ganges, drilled to a depth of 1,150 feet, in Section 31, Bloomington Township, Richland County, by Moore, Wright & Thompson, and continue it on through the Clinton sand which should be reached at an approximate depth around 2,100 feet.

To Make Thorough Test

That Richland County is going to get the thorough testing that has long been due it, is evidenced by the large amount of territory being leased and number of new wells contemplated. A large block of leases has been taken northeast of Shelby and tests planned. It is understood a large Shelby industry is contemplating laying a line in case gas in sufficient quantities is found. E. A. Gettings of Mansfield has taken leases on over 1,000 acres southwest of Shiloh and contemplates starting test work at once. Coyle & Matthews, of Ashland, Ohio, have leased over 3,000 acres in a solid block in Jackson and Franklin Townships and have made a location on the Lantz farm in Section 19, Franklin Township.

Mansfield and Youngstown parties are considering the drilling of one or more test wells just west of Mansfield in the hope of getting enough gas to supply residents in the fast growing new allotment on the Park Avenue West Road. Gas was found in good quantities at shallow depths a number of years ago and some of these wells are still producing. The large Burneson wells found in the lime at around 1,800 feet were in that vicinity.

More than 15 years ago a well was drilled to 4,400 feet by Peter Scholl and others on the Independent Oil Co. lot just a block south of the Erie & Pennsylvania passenger station. This well has a nice showing of gas in both the Berea sand at 450 feet and the Clinton sand at 2,500 feet, as well as in a stray sand found at 3,900 feet, and an excellent showing of oil. The well was drilled to Trenton Rock at 4,300 feet and drilled 100 feet in that formation. It was shot in both the Trenton (which brought salt water in large quantities) and the 3,900-foot stray, oil showing but the drillers had not kept an accurate log of the well and it was eventually plugged.

All Seeking Gas

To the northeast of Mansfield about 4 miles, F. Marion Snyder drilled a well for the brick plant that showed considerable gas in the Berea sand. To the north and northeast of Mansfield lie thousands of acres never tested. This territory lies in the favorable Berea and Clinton structure and will, in the near future, be tested out. West of Mansfield, near the village of Ontario, lies muc hacreage that well deserves a test. That the big companies are seeking all available gas is evidenced by the fact that the Logan Gas Co., is laying a line a considerable distance to the several small gas wells drilled by the Ashville Development Co. in Mifflin Township, Ashland County, to the east, a short distance from Mansfield.

In the village of Shiloh, a town lot drilling campaign is on, there being three wells started within the past few days. George Lacknett has started a well on the J. Gilger, Section 11, Cass Township, Richland County; Glass & Smith are drilling No. 1 Barnes, Section 10; and Mitchell & Noah are drilling No. 1 Drury, Section 11, these being the village tests. In Section 14, Harmon, Robinson & Mohlar are drilling a test on the M. M. Gilger. Bricker Bros. are drilling No. 1 Noble farm, Section 12, and Weiseman and others are drilling No. 1 D. Malone, Section 2. In Bloomingrove Township, Ashland, Ohio parties are drilling a test on the O. Wells farm, Section 20.

Other Central Ohio Developments

In Walnut Township, Fairfield County, the Logan Gas Co. drilled a dry hole in No. 4 Silas W. Kinney, Section 24.

In York Township, Medina County, the Logan Gas Co. drilled in a nice gas well at a second test on the Myra Brogan, Section 1, and a light gas well at No. 3 Henry C. Spieth, Section 3. The Ohio Fuel Gas Co. brought in two fine gas wells in the same township, in Nos. 3 and 4 George Acker farm, Section 3.

In Grafton Township, Lorain County, the East Ohio Gas Co. drilled in a fairly good gas well at No. 3 C. F. Shaffer, Lot 67. The Ohio Fuel Gas Co. made locations for No. 1 M. M. Droege 47 acres, Lot 54, and No. 1 William Stock 83 acres, Lot 12. Dillon & Frederick made location for a test on C. H. Spieth 65 acres, lot 30. In the Avon Lake Village, the Wiser Oil Co. drilled a dry hole in a test on the Frank I. Krebs, Section 20.

The best oil well of the week in the Central Ohio Field was drilled in by the Ohio Oil Co., in No. 1 William M. Orr, Section 21, Wooster Township, Wayne County, with a production of 100 bbls. from the Clinton. This company has made a location for No. 1 on the Jess Hess 80 acres, better known as the C. L. Korns farm, same township, and Hoover and others made a location for No. 1 on the Charles Lapper 4½ acres, Section 9.

In Congress Township, Wayne County, the Ohio Fuel Gas Co. drilled a duster in a test on the John Ferguson, Section 14, and John Gaut and others got a very light gas showing at its test on the J. M. Marsh, Section 12. In Milton Township, the East Ohio Gas Co., found a dry hole at a test on the Raymond Gabrill, Section 31.

In Wayne Township, Wayne County, the Klise-Eckstein-McCann Co. got a small gas well at a test on the D. Snyder 165 acres, Section 21, and made a location for No. 3 on the W. A. Taylor 157 acres, Section 9. The Logan Gas Co. drilled in a light gas well at No. 1 on the A. L. Allhouse, Section 16. The Ohio Fuel Gas Co. made a location for No. 1 on the L. Raudebaugh 82 acres, Section 16, and for No. 1 C. Barsch 40 acres, same section.

Wayne County Operations

In Cannan Township, Wayne County, the Logan Gas Co. drilled a fair gas well at No. 2 W. F. Funk, Section 11, and is drilling No. 1 Charles Kollert, Section 19. The Ohio Fuel Gas Co. got a fair gas well on the S. C. Jackson, Section 21, and made a location on the R. and C. Gliern 29 acres, Section 34. Brinkerhoff and others drilled in a nice gas well in No. 2 A. Smith, Section 15, and the Creston Gas Co. made a location for a second well on the D. Wilse 120 acres, Section 21.

The Ohio Fuel Gas Co. has started the drill at its test on the Margaret C. Foster farm, Section 15, Clinton Township, Vinton County, in the south part of the Central Ohio Field. In Benton Township, Hocking County, the same company started drilling No. 1 Elza Davis, Section 27, on an 820-acre tract.

In Ripley Township, Holmes County, the East Ohio Gas Co. drilled a fair gas well in its second attempt on the E. and A. M. Scott, Section 1. In Moore Township, the Ohio Fuel Gas Co. is drilling a test on the H. E. Clinage, Section 19. In Prairie Township, the East Ohio Gas Co. started drilling No. 1 L. A. Sowash 56 acres, Section 17.

The Ohio Fuel Supply Co. made a location on the Edward Townsend 2 acres, Section 1, Coal Township, Jackson County. Same company started drilling No. 1 Clarissa Scurlock 55 acres, Section 2, Franklin Township, same county.

In Carthage Township, Athens County, Ohio Fuel Supply Co. got a nice gas well in the Keener sand at its No. 2 H. W. Barnhart, Section 11, and the Bradford Oil & Gas Co. is drilling its No. 3 D. Dunlavey 131 acres, Section 11. In Rose Township, the Rone Run Oil & Gas Co. got a light gas well at a test on the Fred Mankin 4 acres, Section 7. In Berne Township, same county, the Ohio Fuel Supply Co. made a location for a wildcat test on the Gertrude Shurrick 123 acres, Section 13. Same company made a location on the W. G. Mease 7 acres, Section 25, Sutton Township, Meigs County, and is drilling No. 1 David N. Nease 92 acres, Section 25, same Township. This company also made a location for a wildcat on the Bartlett Parker 116 acres, Section 13, Rutledge Township, Meigs County.

Several years ago a big well was drilled a mile or so below Butler, near the line of Richland and Knox Counties, and caused great excitement at the time, owing to the gravity of the crude, reported the highest gravity of any oil found in the Buckeye State. It proved a freak well and while a large producer, encouraged further work in that vicinity, but all tests drilled to the deep Clinton proved of little value. It must be remembered that in those days little was thought of the shallow Berea sand as the showings from that sand in the deeper drillings only showed a rainbow color of oil, but since that time some interesting shallow Berea sand fields have been developed and there is talk of further testing the territory in the vicinity of Butler, as some excellent Berea wells have been found in the vicinity of Ankenytown and Frederickstown in northern Knox County.

Indiana Field

Quietude prevails in all the known fields of Indiana, and but three completions were reported for the week, all failures and located in Sullivan County. In Turman Township, of this county, Dugger parties drilled their second well on the T. Carrothers, Section 30, and failed to find a commercial well at a depth of 869 feet. In Gill Township, Fred Bays could not find anything at 750 feet in his test on the Cynthia Huff, Section 3, and abandoned the hole. In Fairbanks Township, Charles Hollingsworth and others went to a depth of 653 feet on No. 1 J. F. Harrison, Section 35, and abandoned it as dry.

In Harrison Township, Knox County, Perry Andrews is drilling a test on the T. S. Barlow, Section 30, and has a rig in for No. 2 on the Ida B. Doty, Section 29.

Illinois Field

The only reported well from the entire Illinois area for the week came from the Waterloo Township Field, in Monroe County, southeast of East St. Louis, where Henry Schneider and others abandoned their No. 5 on the Dena Acker 40 acres, Section 11, at a depth of 240 feet and the tools were moved away.

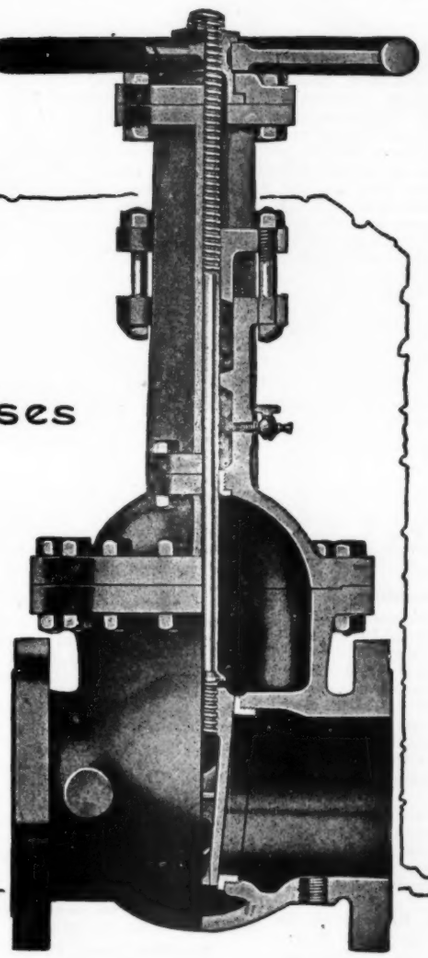
Eastern Kentucky Field

Only nine completions were reported from the Eastern Kentucky Fields for the week, scattered over three counties, comprising Lawrence-Johnson County, Owsley and Morgan County areas. Owsley County is developing quite an important gas field, the bulk of the development work being done by the Petroleum Exploration Co. The gas completion of this company was No. 1 on the Daniel C. Manows 190-acre farm, near Buck Creek Post Office, with a volume of better than 2,575,000 feet. The second completion was on the W. S. Hamilton farm of 90 acres, showing better than 500,000 feet. The third recent completion was a dry hole on the A. J. Barker farm which, according to the Trice News, practically defines the territory where gas is to be found in that area. The Petroleum Exploration Co. holds a large acreage in Owsley County and has already drilled quite a number of gas wells, the gas being utilized by the company's carbon black plant at Ida May, several miles from the gas area. The company has an 8-inch line from the gas field to the plant, giving the company a constant supply of gas for use. This company is one of the large development companies of the eastern Kentucky fields and has drilled many wildcat wells.

In Owsley County, outside of the Petroleum Exploration Co.'s completions, the Atlantic Oil Producing Co. is credited with a well showing 5 bbls. on the

(Continued on Page 114)

CHAPMAN



Cast Steel
GATE VALVES
For Cracking Processes

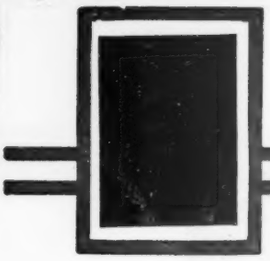
Designed and
Constructed for
ALL PRESSURES
and Temperatures
up to
1000 degrees Fahr.

The Chapman Valve Manufacturing Co.
Indian Orchard, Mass., U.S.A.

BRANCHES:

New York	Syracuse	San Francisco	Houston
Boston	Pittsburgh	Los Angeles	Atlanta
Chicago	Philadelphia	Cleveland	Tulsa

VALVES



North Louisiana-Arkansas

By M. L. Vaughn

Production declines 2,895 bbls. Chew and others' No. 1 Harrell, Union County, swabs 500 bbls.; Barnsdale & Foster's No. 3 J. Murphy, 400 bbls.; Tidal Osage Co.'s No. 2 Vestal, 500 bbls. Smackover Oil Co.'s No. 1 McElroy, Ouachita County, flows 250 bbls. Owenwood Oil Corp.'s No. 1 Snyder pumps 250 bbls.

SHREVEPORT, La., Dec. 3.—Decreases in production were shown in all except four areas of the north Louisiana-south Arkansas territory as indicated by pipe line runs for the past week, the aggregate net loss throughout the various pools being 2,895 bbls., for which light Smackover was to the greatest extent responsible, the drop from the previous week in that production being 2,160 bbls. The greatest increase was in heavy Smackover which showed a gain of 500 bbls. daily. The distribution was as follows:

North Louisiana	
Caddo, light	8,835
Caddo, heavy	2,440
De Sota-Red River	5,555
Elm Grove	1,030
Haynesville	23,575
Homer	9,215
Bellevue	6,240
Total	56,890
South Arkansas	
El Dorado	11,525
Calion	7,715
Stephens	2,590
Smackover, light	17,730
Smackover, heavy	80,400
Total	119,960
Total both areas	176,850
Total last week	179,745
Decrease	2,895

Smackover Completions

New production aggregating 2,135 bbls. with 50,000,000 feet of gas resulted from 10 completions in the Union County area of the Smackover Field during the past week. No failure was recorded and the average per well was better than 250 bbls. though none ran over 500.

The Arkansas Natural Gas Co.'s No. 2 Ferguson, Section 6-16-15, was a gasser with 35,000,000 feet, completed at 2,265 feet.

Barnsdale & Foster are swabbing 400 bbls. from No. 3 J. Murphy, Section 17-16-15, completed at 2,260 feet.

Chew and others are swabbing 500 bbls. from No. 1 Harrell, Section 17-16-15, from 2,075 feet.

The Higgins Oil & Refining Co. is pumping 250 bbls. from No. 2 James, Section 21-16-15, completed at 2,065 feet. The Humble Oil & Refining Co. completed No. 2 E. G. Murphy, Section 14-16-15, flowing 250 bbls. from 2,000 feet, and No. 1 Saxon, Section 32-15-16, pumping 85 bbls. from 2,260 feet.

The Murphy Trustees completed No. 2 Lawton, Section 7-16-15, with 15,000,000 feet of gas from 2,395 feet.

The Standard of Louisiana completed No. B-1 C. L. Saxon, Section 5-16-16, flowing 110 bbls. of fluid 15 per cent b.s. and 13 per cent water, from 2,280 feet.

The Tidal-Osage Oil Co. completed No. 2 Vestal, Section 17-16-15, swabbing 500 bbls. from 2,145 feet.

Woodley and others are pumping 40 bbls. from No. 7 Van Hook, Section 7-18-14, completed at 2,205 feet.

Drilling Operations

Activity in this area remained on the same level as the preceding week, new operations keeping pace with completions.

Barnsdale & Foster are rigged up to drill No. 4 J. Murphy, Section 17-16-15. Berfet and others tested salt water an dhave the hole waiting orders at 2,640 feet in No. 1 Snyder, Section 2-19-15. Browder and others are drilling at 1,570 feet in No. 1 Burns, Section 17-16-15. Burton and others are drilling in shale at 1,950 feet in No. 1 Smith, Section 19-15-16.

The Federal Petroleum Co. is waiting on standard rig for No. 1 W. H. Murphy, Section 22-16-15, which is standing 1,000 feet in oil at 2,060 feet with 39 feet of sand, and in Section 28-17-12 is drilling in sandy lime at 3,015 feet in No. 2 Union Saw Mill.

Garrett and others are drilling in gummy shale at 2,140 feet in No. 1 Robinson, Section 23-18-14. The Gulf Refining Co. has started drilling No. 1 Clawson, Section 14-16-15; is drilling in gumbo at 1,935 feet in No. 3 J. G. Murphy, Section 17-16-15; has set surface 10-inch in No. 12 Lewis Werner, Section 81-16-16, and has derrick up for No. 13 Lewis Werner, Section 35-15-17.

Harrell and others are running core barrel at 2,235 feet in No. 1 Tulé, Section 11-19-12. The Haviland Oil Co. is rigging up to drill No. 1 Jameson, Section 23-16-15. The Higgins Oil & Refining Co. set surface 15½-inch in No. A-3 Murphy, Section 14-16-15. Y. E. Hildredth is bailing at 2,300 feet in No. 1 Smith, Section 2-16-17, with a showing of considerable salt water. Hodges and others have rigged to drill No. 1 Murphy, Section 7-16-15. The Humble Oil & Refining Co. set surface 15½-inch in No. 3 E. G. Murphy, Section 15-16-15, and has rigged up to drill No. 4 in Section 14-16-15. Hunt and others tested dry at 2,270 feet in No. 1 Primm, after plugging back from 2,290 feet, in Section 1-16-16.

Tarver and others set 6-inch at 2,230 feet in No. 1 Childs, Section 8-16-16. The Texas Co. is waiting on standard rig for No. 2 J. T. Murphy, Section 22-16-15, standing 700 feet in oil at 2,060 feet. Weatherbee and others are setting 2-inch with packer at 2,260 feet in No. 1 Rice, Section 6-16-16, with 1,800 feet of oil in hole. Willroy and others have derrick pattern on location for No. 1 Goodwin, in Section 23-16-15.

Ouachita County Completions

Nine producers and no failures were reported from this area last week, seven in the light oil territory. The Forest Oil Co. completed No. 1 Hardin, Section 28-15-16, pumping 75 bbls. at 2,285 feet. The Gulf Refining Co. brought in No. 1 Patton, Section 32-15-16, flowing 20 bbls. at 2,260 feet.

The Invaders Oil Co. made a 60-bbl. pumper of No. 4 Hardin, Section 28-15-16, at 2,305 feet. In the same section, Miller and others completed No. 4 Hardin, pumping 85 bbls. at 2,260 feet.

Keen & Woolf completed No. 4 Myer Estate, Section 32-15-16, flowing 175 bbls. at 2,245 feet. The Smackover Oil Co. completed No. 1 McElroy, Section 29-15-16, flowing 250 bbls. at 2,285 feet. The Texas Co. completed No. 2 Solmson, Section 29-15-16, flowing 150 bbls. at 2,275 feet.

In the heavy oil area the Owenwood Oil Corp. completed No. 1 Snyder, Section 34-15-15, pumping 250 bbls. at 1,995 feet, and the Simms Oil Co. completed No. 2 T. A. Laney, Section 31-15-15, making 20,000,000 feet of gas and flowing 5,000 bbls. of salt water at 2,315 feet.

Most of the present drilling activity is in the western area of the light oil territory and several wells completed some time ago as small producers or failures are being rigged up to deepen. A summary of Ouachita County operations last week, including the Stephens Field, shows 3 wells waiting standard rig; 8 temporarily abandoned; 57 drilling; 6 rigged up; 20 derricks; 2 locations.

The Arkansas Natural Gas Co. is arranging to test No. 2 Patton, Section 31-15-16, and has set 6⅝-inch casing at 2,000 feet in No. 3, Section 30-15-16. Bray-Hawthorne have set 6-inch casing at 1,885 feet in No. 4 Patton, Section 31-15-16. Dr. Clark is bailing to test No. 1 Barry at 2,280 feet, Section 24-15-17. The El Dorado Union Oil Co. has set 6-inch casing at 1,845 feet in No. 2 Shirey, Section 30-15-16, and the same at 2,185 feet in No. 2 Smith, Section 36-15-17.

The Forest Oil Co. is rigging up to deepen No. 6 C. E. Cramer, Section 22-15-16, which was formerly completed last June as a 50-bbl. well at 2,037 feet.

Hale and others have derrick up for No. 2 Ward, Section 25-15-17. No. 1 Ward was drilled under the name of Rogers and others. L. K. Hamilton has set 10-inch casing at 190 feet and is down 600 feet in No. 1 Patton, Section 31-15-16. The Houston Oil Co. is down 1,700 feet in No. 1 Patton, Section 31-15-16, and set 6⅝-inch casing at 1,950 feet in No. 2 Reynolds, Section 27-15-16.

Hunt and others set 10-inch casing at 80 feet in No. 2 Solmson, Section 30-15-16. Keen & Woolf have rig up for No. 3 Myer Estate, Section 32-15-16. Lanier and others are down 1,450 feet in No. 1 Shirey, Section 30-15-16, and are arranging to drill No. 1 Murphy deeper in the same section, a well which was completed last September as a 200-bbl. producer at 1,937 feet.

Lewis & Clark set 12½-inch casing and drilled to 1,500 feet in No. 3 Berry, Section 24-15-17. The Magnolia Petroleum Co. is down 900 feet in No. 3 Patton and 600 feet in No. 2, Section 32-15-16. It set 12½-inch casing at 170 feet in No. 3 Smith, Section 31-15-16.

Show of Oil

The Metric Oil Co. tested salt water and show of oil at 2,323 feet in No. 3 Horton and is now bailing liner to reset and test again at same depth, Section 36-15-16. The Ohio Oil Co. tested No. 2 Reeves dry with a show of oil and is now waiting orders at 2,245 feet, Section 28-15-16. The Owenwood Oil Corp. has set 6⅝-inch casing at 1,860 feet in No. 2 Snyder, Section 34-15-15.

The Peer Oil Co. is down 2,160 feet in No. 1 Mullins, Section 27-15-16. The Pure Oil Co. is drilling at 2,400 feet in No. 1 Moline Timber Co., Section 21-11-17. J. D. Reynolds set 10-inch casing and drilled to 1,150 feet in No. 1 Smith, Section 25-15-17.

Riley and others have a fishing job at 2,070 feet in No. 1 Henry, Section 10-11-16. The Roxana Petroleum Co. is rigging up to deepen No. 1 Laney, Section 31-15-15, which was completed some time ago as a 700-bbl. well.

The Smith Refining Co. set 10-inch casing at 100 feet in No. 4 fee, Section 30-15-15; set 10-inch casing at 80 feet in No. 1 McRae, same section, and set 6-inch casing at 1,840 feet in No. 2 McRae. They have derrick up for No. 5 Patton, Section 31-15-16.

Snowden & McSweeney set 6-inch casing at 2,245 feet in No. 2 Taylor, Section 29-15-16. Solmson and others are fishing for swab in No. 1 fee, Section 30-15-16. This well was formerly completed as a 10-bbl. producer last month at 1,981 feet.

The Standard Oil Co.'s No. 2 Solmson was flowing 250 bbls. of oil at 2,285 feet and about 5,000,000 feet of gas but sanded up and now bailing, Section 29-15-16.

The Transcontinental Oil Co. tested salt water at 2,970 feet in No. 1 Minor, Section 20-15-16, and has drill stem stuck at 3,015 feet. The V. K. F. Drilling Co. is down 1,960 feet in No. 2 Patton; rigging up No. 3 and derrick up for No. 4, Section 32-15-16. White and others are arranging to test No. 2 Watt at 2,280 feet, Section 30-15-16. Wingfield and others have rig up for No. 1 Fincher, Section 32-15-16. The Woodley Petroleum Co. set 10-inch casing and 6-inch at 1,890 feet in No. 1 Patton, Section 32-15-16, and has derrick up for No. 2.

Stephens Field

Ouachita County Area: The Atlantic Oil Producing Co. completed No. 3 John Webfer, Section 30-15-19, pumping 25 bbls. at 2,095 feet. It abandoned the location for No. 4, same section. Harrell and others abandoned the location of No. 1 Williams, Section 30-15-19.

Columbia County: The Atlantic Oil Producing Co. set 12½-inch casing and drilled to 480 feet in No. 4 Milner, Section 24-15-20. Pete Hoffman set 6-inch casing at 2,065 feet in No. 1 Buffington, Section 24-15-20. The Magnolia Petroleum Co. set 10-inch casing and drilled to 700 feet in No. 4 Hammond, Section 25-15-20.

Operations in the shallow sand district in Bossier Parish resulted in the completion of three good pumpers during the week. The Humble Oil & Refining Co. completed two wells on the Roy, Bliss & Weatherbee lease in Section 15-19-11, No. 20 pumping 30 bbls. at 315 feet and No. 24 pumping 30 bbls. at 360 feet.

Olmstead and others completed Strange No. A-10, in Section 23-19-11, making a 40-bbl. pumper at 290 feet.

The Humble Oil & Refining Co. is drilling at 335 feet in No. 25 Roy, Bliss & Weatherbee; Olmstead and others are drilling at 165 feet in Strange No. A-11, Section 10-19-11, and the National Oil Co. set 6-inch casing at 330 feet in No. 12 Elston, Section 10-19-11.

R. O. Roy has two wells completed and ready to pump on the Scanland lease in Section 15-19-11, No. 22 and No. 23, and is rigging up to drill No. 27.

The Standard Oil Co. is drilling at 380 feet in No. 9 Bliss & Weatherbee and has derrick up for No. 10 in Section 10-19-11, and Webb and others have set 6-inch casing at 312 feet in No. 2 Catlett, Section 27-19-11.

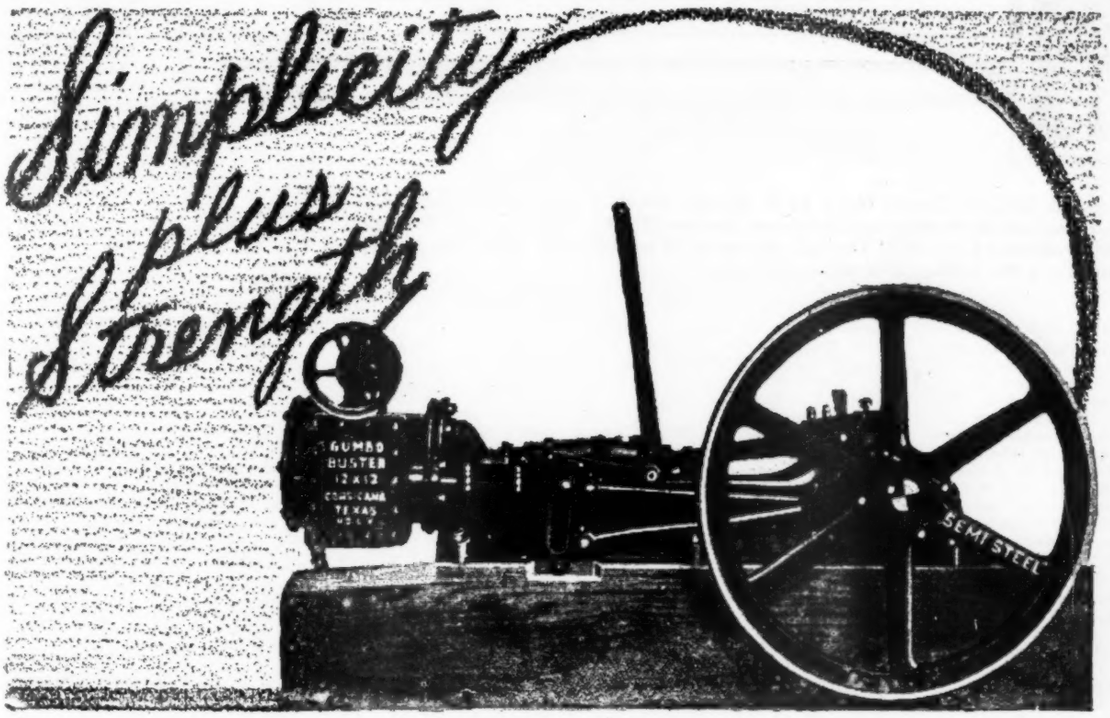
Caddo Parish: The Fortuna Oil Co.'s No. 10 D. Thigpen, in Section 5-20-15, made a 5-bbl. pumper at 1,587 feet. No. 18 Robertshaw, in Section 14-21-15, is swabbing at 1,670 feet.

The Humble Oil & Refining Co. is drilling at 2,550 feet in No. 1 Youree-Randolph, Section 24-20-15, and the Muslow Oil Co. set 6-inch casing at 2,050 feet in No. 2 Brown fee, Section 32-21-15.

Claiborne Parish: The Ohio Oil Co. abandoned its test on the Teague lease in Section 10-23-7, having run into salt water at 3,320 feet. The only rig left running in Claiborne Parish is the Triangle Drilling Co.'s No. 1 Rainach, in Section 17-22-5, 15 miles southeast of Haynesville, drilling at 2,150 feet.

De Soto Parish: The only indication of immediate activity in De Soto Parish

(Continued on Page 90)



Gumbo Buster Drilling Engine
Model "A"

To stand the severe service in the oil field, your drilling engine must have exceptional strength, and should be of simple construction. The "Gumbo Buster" Model "A" Drilling Engine meets these requirements. Every engine is thoroughly tested before leaving the plant—assuring dependability.

—Crank shaft is made of best open hearth carbon steel, and the crank pin and journals are ground to a limit of 2 one-thousandths of an inch over or under size.

—Connecting rod is forged from open hearth steel—not cast, and is fitted with the best bronze crank pin and cross head brasses.

—Main crank shaft bearings are of pillow box type, fitted with quarter boxes.

—Fly wheel furnished for either cable or rotary drilling.

Write for complete details and prices

Republic Supply Co. Distributors
Texas Louisiana Arkansas Oklahoma

AMERICAN WELL & PROSPECTING CO.
CORSICANA, TEXAS **California Branch: LOS ANGELES**

West Kentucky-Tennessee

By Vern T. Whitney

Bonnell, Sloan & Zook's No. 1 L. R. Blythe, Kettle Creek, with no showing and plugged six months ago, reopened, pumped 90 bbls. in 21 hours. Atlantic Oil Producing Co.'s No. 1 Dowell, estimated 50 to 100 bbls. Houchins Leasehold Co.'s No. 1 Mansfield makes 30 bbls.

BOWLING GREEN, Ky., Dec. 3.—Early this week the Paragon Development Co. turned oil into its pipe line at Neeley's Ferry, in Cumberland County, opening the long awaited outlet. The line can only handle 1,500 bbls. per day, but its capacity will be increased, if necessary. Two wells have been selected for a test, No. 1 Bud Kerr and No. 1 Logan, in the Kettle Creek Pool, and will be allowed to ship 500 bbls. each per day for two weeks, or until the wells weaken. This will give a line on what can be expected from the big, flowing wells which have been brought in in this pool.

An important feature for the week in the Western Kentucky Field was the completion of No. 1 L. R. Blythe of Bonnell, Zook & Sloan, in the Kettle Creek district of Cumberland County. This well was drilled six months ago as an offset to W. S. Raydure's No. 1 Bud Blythe and the Petroleum Exploration Co.'s No. 1 Milton Blythe. It was shot twice with no show of oil and plugged with the casing in the hole. This past week it was reopened, tubed and pumped, making 90 bbls. in the first 21 hours. In the same district, the South Kentucky Oil Co. shot its No. 1 L. R. Blythe with 60 quarts from 435 to 455 feet, in the Second Sunnybrook sand, and was rewarded with a 7-bbl. pumper, which extends the main production of the Kettle Creek Pool 1 mile to the west.

Two miles west of Glasgow, in Barren County, Fred Moore of Bowling Green, Ohio, got a fine producer in his No. 1 Scott. The well was shot with 30 quarts from 584 to 590 feet and flowed. Oil sprayed over the boiler and ignited, making a spectacular fire and causing considerable damage before it could be put out. On a two-hour test on the beam the well made 15 bbls. without pumping off. The rig was moved to the Howard farm in the same vicinity. On the Mansfield tract, the Houchins Leasehold Co. finished its No. 1 at 565 feet, good for 30 bbls. naturally. This well was located 3,000 feet west of the Scott well and shows quite a nice extension.

Week's Work

A summary of the week's work shows an increase of 128 bbls. in production, 8 more completions, 8 more producers, and the same number of dry holes, compared with the previous week. The wells were distributed by counties as follows:

County—	Comp.	Prod. Wells	Prod.	Dry
Barren	8	6	61	2
Allen	4	3	8	1
Warren	2	2	35	0
Hopkins	2	0	0	2
Cumberland	2	2	97	0
Hancock-Ohio	1	0	0	1
Owen	1	0	0	1
Simpson	1	1	18	0
Clay, Tenn.	1	0	0	1
Marshall, Tenn.	1	0	0	1
Total this week	23	14	219	9
Total last week	15	6	91	9
Difference	8	8	128	0

With two wells on top of the sand and others drilling, the coming week will furnish at least four completions in the Davies-Hancock-Ohio County oil fields.

The Kentucky Oil Co., on the Chambers lease, near Old Panther Church, in Ohio County, had its first venture on this property on top of the sand Wednesday night and was preparing to drill in. The well will be finished in the Barlow formation and is drilling at approximately 680 feet. To the northeast C. A. Leeper is preparing to drill in on the Bailey lease which adjoins the Leeper Oil Co.'s Amanda Stewart lease.

C. E. Daugherty & Co. drilling on the Charles Payne tract at Herbert school house, are down to 500 feet and will drill in within a few days, barring accidents. On the Ellen Howard farm, near Aetnaville, the Wood Oil Co. has a very serious fishing job and will be delayed several days. This well is now down about 600 feet and with good luck should furnish a completion in 10 days.

During the past week there have been a number of oil men in this vicinity looking over the situation, among them P. T. Thurman, of Wichita, Kans., and Fred Carson of Lexington.

Syndicate Abandons Well

The Chicago Petroleum Syndicate has abandoned the well drilling on the Taylor farm at Maceo. At a depth of 1,300 feet a strong flow of salt water was encountered, and it was decided to discontinue operations.

The Petroleum Extraction Co. is spudding in on its fourth well during the past year in McLean County. This location is made on the Fulkerson farm, near Elba, and said to be on an excellent structure.

Cumberland County

Bear Creek District: Wilcox Bros., of Cleveland, Ohio, spudded in No. 1 on the Sarah Sheckels farm in the Modoc vicinity where, if production is found, it will extend the Modoc Pool 1 mile to the east. The S. Riddle well, at Modoc, of E. M. Treat & Co., which recently went on salt water is now producing between 40 and 50 bbls. of oil per day. When drilled in this test made 750 bbls. and in a week's time put over 2,000 bbls. in storage tanks. The Paragon Development Co. is reaming to set casing below the Pencil Cave at 930 feet in its No. 1 M. L. Spear. Douglass St. Clair's No. 1 Bob King is shut down at 150 feet waiting for a new boiler. This is a wildcat test.

Sulphur Creek Pool: Hook, Ross & Wise's No. 2 J. B. Riddle is showing for a good producer in the first Sunnybrook sand at 300 feet. The Combest Oil Corp. has a very good looking well in No. 4 on the A. Huddleston 210 acres at 650 feet, 150 feet below the Pencil Cave. It is claimed to be the test well drilled on the property and just as soon as a string of 4⅞-inch casing is run to cut out the crevices, it will be given a test. On the adjoining 175 acres, the Morris Petroleum Co. is drilling at 150 feet. W. S. Raydure has just touched the second Sunnybrook sand in No. 1 L. L. Coop at 480 feet.

At Marrowbone Creek, No. 1 Ethel Baker of D. St. Clair, is making hole at 300 feet. At Renox Creek, the Shady Side Oil Co. is down 390 feet on the Strange farm. The Judio Development Co. is reaming No. 3 L. Hume.

Kettle Creek District

The Atlantic Oil Producing Co.'s No. 1 Dowell is showing for a good producer at 440 feet. The well is being tubed and is flowing at intervals. It is estimated good for from 50 to 100 bbls. The deep well recently completed by W. S. Raydure on the Porter Huddleston farm, on top of Dooley's Hill, has gone dry and will be abandoned. The Young Oil Co. is shut down at 100 feet on the J. R. Poindexter farm. Lynch & Co. has spudded in a wildcat test on the Barksdale farm, about 1 mile south of the Scott farm. Bushaw and others are shut down at 170 feet on No. 3 Turn Smith. The Gartlan Estate is spudding No. 3 on the Bud Kerr. It is three locations east of No. 1, the discovery well, and is an offset to No. 2 Kim Crawford and No. 1 Dowell of the Atlantic Oil Co. W. S. Raydure is drilling at 876 feet on the Sam Smith farm.

The Kentucky Glycerine Co. finished its magazine on the Joh nCrawford farm and will stock it with nitro immediately to take care of the Kettle Creek district.

Warren County Wells

The best well for the week in Warren County was the No. 3 Dr. C. E. Francis, of Foster, and associates of Dayton, Ohio. It was drilled 1,800 feet west of No. 1 and is good for 20 bbls. after a 60-quart shot. Sand was found from 505 to 542 feet. No. 4 is spudding 500 feet north of No. 2.

In the northeast extension area the Plantation Consolidated Oil Co.'s No. 9 W. A. Gott 75 acres is a 15-bbl. pumper at 1,014 feet.

Drilling Activities

Sandidge-Francis District: Makeever Bros.' No. 3 Higginbotbam is down 320 feet; Bannon & Stewart's No. 3 Shields is drilling at 430 feet; White & Foster are spudding No. 1 Wood, 1 mile south of the Francis property; Foster and associates' No. 4 Francis is spudding; G. W. Pyle is shut down at 700 feet on the Watkins farm; F. W. Evans is 300 feet and drilling on the No. 1 Arch McGinnis; Reed and others' No. 1 Montague is shut down at 240 feet.

Northeast Area: E M. Treat & Co.'s No. 15 S. Smith is making hole at 500 feet, No. 16 is down 50 feet; Plantation Oil Co.'s No. 10 W. A. Gott 75 acres is drilling at 670 feet; No. 11 is spudding. The Ohio Fuel Oil Co.'s No. 14 Gott 100 acres is 675 feet and drilling. Wood River Oil Corp. is shut down on the R. Oliver farm. J. J. Fort is ready to drill on the Vick White farm.

In the Rockfield sector, C. P. Taneyhill is drilling at 200 feet on the No. 3 Price-Hall; C. L. Turner is shut down at 450 feet on the No. 3 McLemore; Jackson Oil Co. is 670 feet and drilling on the Jackson farm; Pennsylvania Oil Syndicate is spudding No. 6 J. F. Young; Gillespie Oil Co.'s No. 4 Gillespie is drilling at 700 feet; Bolling & Loman's No. 3 Ben Price is making hole at 321 feet.

Other Completions

Barren County: Horace Coombs' No. 6 Summers, 6 bbls. at 600 feet; Federal Oil Co.'s Nos. 3 and 4 Wright, 2 and 1 bbls., respectively, at 440 and 437 feet; Cave City Oil & Gas Co.'s No. 3 Bybee, 2 bbls. Same company's No. 1 Lyons, dry; Smith & Son's No. 1 Green, dry in shallow sand.

Allen County: M. B. W. Syndicate's No. 3 F. Gibson 60 acres, 2 bbls. at 243 feet; V. R. Borah's No. 8 R. H. Goad, 3 bbls. at 340 feet; Fishburn Oil Co.'s No. 1 Carter, dry; Watterson & Co.'s No. 3 B. Willoughby, 3 bbls.

In Simpson County, C. A. Phelps and associates completed an 18-bbl. pumper in No. 3 on the Holland farm at 496 feet. This property adjoins the Summers farm of E. M. Treat & Co. in the Pugh district.

Two wildcats in Hopkins County failed to show any production and will be abandoned. No. 1 Bishop, 4 miles south of Nortonville, was plugged at 500 feet. The Pleasant View Oil Co.'s test 1 mile west of Shake Rag was dry at 1,214 feet. In Owen County, in north central Kentucky, J. A. Boyle abandoned No. 1 on the L. P. Alexander farm at 501 feet.

Clay County, Tennessee

The Neeley's Creek Oil Co. has abandoned its No. 1 test on the Daly farm, near the town of Celina, in Clay County, Tennessee at 865 feet. Biggerstaff & Durham's No. 3 L. Bilbrey, near Spivey, is drilling at 300 feet; Union Oil Trust's No. 2 Kyle, between old and new Celina, is drilling at 165 feet; Hunt & McQuarry's No. 1 Marcum 48 acres, at Willow Grove, is making hole at 160 feet; Powell Oil Co. is drilling at 800 feet in its No. 3 Arch Short, near Kettle Creek. Both first and second Sunnybrook sands were barren. C. R. Dixon is spudding in No. 1 A. A. Stanford near Lillydale.

In Marshall County, the Beckley Oil & Gas Co. abandoned its No. 1 Haywood in the deep sand.

Pennsylvania-West Virginia

By D. S. Wakenight

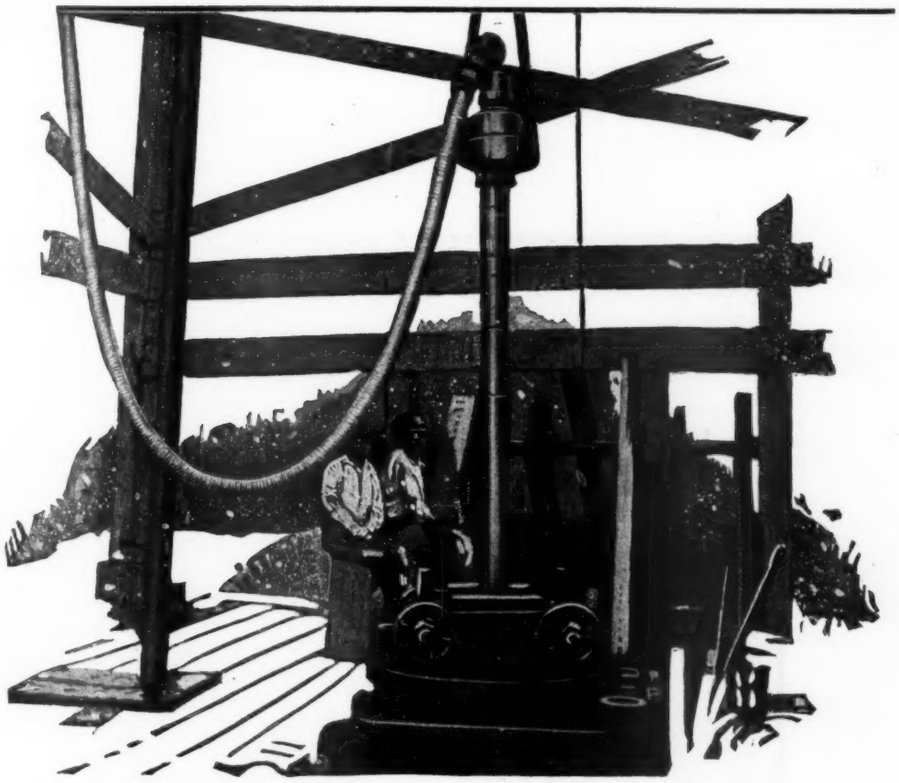
PITTSBURGH, Pa., Dec. 3.—There was only one exception to light pumpers, gassers and dry holes in the West Virginia fields during the week. In Otter district, Braxton County, the West Virginia Central Gas Co. met with a surprise when it drilled its test on the Luther Allison farm into the Maxon sand. It is in what has been regarded as gas territory but flowed 50 bbls. the first 24 hours after it was drilled into the sand. In addition to its showing as an oil producer it is a gasser good for 1,500,000 feet a day. The location is a considerable distance in advance of production and may prove of some importance.

On Jobs Run of the Little Kanawha River, DeKalb district, Gilmer County, the Pittsburgh & West Virginia Gas Co.'s second test on the David Linger farm, is a duster in the Big Injun sand. On Tanner Creek, in the same district, the South Penn Oil Co.'s test on the Harriett Gainer farm is dry in the Big Injun sand. In Union district, Lincoln County, the United Fuel Gas Co. has a gasser in the Berea grit at a test on the M. H. Tully farm.

In Spencer district, Roane County, S. A. Simmons & Co. completed and shot in the Big Injun sand a second test on the W. P. Pool farm, a 5-bbl. pumper. On Rock Camp Run, Spencer district, the Federal Oil & Gas Co.'s No. 6 on the Roberts, Pell & Newman farm is a duster in the Berea grit. In Oil Territory, Center ditsrict, Wetzel County, the Hope Construction & Refining Co. has drilled its test on the J. W. Loew farm through the fifth sand and dry. In Courthouse district, Harrison County, the Shea Oil & Gas Co.'s second test on the G. C. Rohrbaugh farm has been completed and shot in the Gordon sand, a very light pumper. In the same district, the Crowl Oil & Gas Co. is building the rig for a second test on the J. E. Crowl farm.

In New Milton district, Doddridge County, Trainer & Summers failed to get gas in commercial quantities and abandoned their test on the Paul Allen farm.

(Continued on Page 113)



Getting There First!

BRANCHES:

Dallas—1201 Young St.

Kansas City—23rd & Grand Aves.

Denver—1422 Court Place

Los Angeles—1386 East 7th Street

You know how it is—*when a big pool is discovered you want to get down to it as fast as you can.* Time is precious—all important. Nothing must go wrong. Every piece of equipment must deliver. Your driller's hose will do everything you expect it to do if it's Goodrich PINNACLE. Nearby Goodrich branches (see list) have stocks of PINNACLE on hand and can give you the quickest possible delivery.

THE B. F. GOODRICH RUBBER COMPANY, *Akron, Ohio*

Goodrich

Pinnacle

THE B F GOODRICH CO. PINNACLE ROTARY DRILLERS HOSE AKRON, OHIO. AKRON RUBBER WORKS

DRILLER'S HOSE

"Best in the Long Run"

MR. W. J. GODFREY
Engineer at
BRANCHLAND STATION
Branchland W. Va.

GODFREY WITH COOPER GAS ENGINES
establishes new non-stop run of 262 days

W. J. Godfrey, station engineer in charge of eight Cooper 485 H. P. Gas Engines, in the Branchland Station of Columbia Gas and Electric Co., Branchland, W. Va., has succeeded in establishing a new non-stop station record for large gas engines. The following is a brief summary of his accomplishment.

All eight engines were started on Sept. 14, 1922.

Eng. No.	Days Continuous Run	Reason for Shutdown
1	222	General Adjustment
2	236	General Adjustment
3	205	Compressor Crosshead
4	103	Compressor Crosshead
5	262	Pipe Line Repair
6	245	Water Leak
7	262	Pipe Line Repair
8	242	Water Leak

The two oldest engines have been operating for nine years in this station where the gas demand is constant both summer and winter. No attempt was made to punish the engines in order to establish a record. It can be seen from the report that when the smallest adjustment was necessary, the engine was stopped and the adjustment made. A complete report showing lubricating oil individual cylinder wear, which averaged two thousandths of an inch for the year, and the complete list of replace parts for the year is available for those who wish it.

Too much honor cannot be given to the man, W. J. Godfrey, whose unceasing energy in watching the small details about his station has made such a record possible. Yet he says, "No engine but a Cooper could last on a job like ours."

THE C. & G. COOPER CO.

1605 Kirby Bldg., Dallas **Mt. Vernon, Ohio** *504 Kennedy Bldg., Tulsa*

NATURAL GAS DEVELOPMENTS

Carbon Black Making Doubled in Capacity In Past Two Years

Capacity for the manufacture of carbon black in the United States has more than doubled in the past two years, according to R. S. Lord, president of the Hope Engineering & Supply Co., of Mt. Vernon, Ohio. Until recent years the carbon black business was a very small industry, the majority of plants being in West Virginia, Pennsylvania and Kentucky. West Virginia, until 1918, produced approximately 70 per cent of the carbon black in the United States. Owing to the shortage of gas and the high prices paid for it in that field by the domestic consumers, most of the plants have been moved from West Virginia to Louisiana, which now produces 60 per cent of the world's carbon black.

Before the war approximately 15 per cent of the carbon black produced in this country was exported to Europe as the demand for black at that time was very limited, and, as most of the processes for making it are patented, very few companies went into the business. As late as 1915 several of the plants throughout West Virginia built high board fences around them and no visitors were allowed at any time.

Channell Process

There are several different types of carbon black plants, the Channell process being used to the greatest extent. In the Channell process, one unit consists of from 30 to 34 hot houses or burner buildings, 118 feet long, 12 feet wide and 8 feet high, made of steel frame and covered with sheet iron, with the main line shaft through a 16-foot alleyway with 15 or 17 buildings on each side. This shaft, which is 4 inches in diameter, operates the channels. The machinery of each unit is run, either by a 20 horse power gas engine, or by a steam engine, which is run on gas pressure. The gas passes around the unit in 8-inch gas mains and into each separate building through two 4-inch gas mains, where it is delivered into the burners.

The burner building to this process consists of a series of steel channels, 7 inches wide and 28 feet long, bolted together by a small channel over the top, 8 channels wide and 4 channels long, supported on a small steel rail 5½ feet in the air. The channels, being bolted together, form a steel frame, which rolls on 10-inch cast iron wheels 4 feet forward and then automatically reverses and travels the same distance in the opposite direction, making a round trip in about 12 or 15 minutes.

Forming the Carbon

The tips, or burners, are directly below the channels and are spaced 4 or 5 inches apart in a 1-inch gas pipe. These tips are made of imported lava to stand the intense heat, with a small slot in the top to spread the flame across the channel. As the channel passes over the flame the carbon is formed and is scraped off into a hopper or bin by a small steel scraper that balances against the bottom of the channel.

These hoppers or bins are made of heavy tin and are spaced 4 feet apart. The black falls into these from the scraper and is carried forward by conveyor or screw to the front of the building into the main alleyway. Here it passes into a larger conveyor, or screw, and is carried into the bolter room, where it is run through a series of very fine mesh wire to remove any small pieces of scale or grit that may have formed in the process of making. It then passes through elevators into the packing room and is deposited into a large bin, from which it is packed into paper sacks by means of an automatic packer, which puts approximately the right amount of carbon in each sack. It is then removed from the packer, tied, placed in a second bag to prevent it from leaking, removed to the warehouse and is ready for shipment.

Prior to the war, the main use of carbon black was for printing ink. The use of carbon black in making automobile tires began following the shutting off of the importation of oxide of zinc from Germany during the war. The tire manufacturers found that by using carbon black in the place of oxide of zinc the tire would give 20 per cent more mileage, last longer and be less liable to blowouts from overheating. One automobile tire, 30 by 3½ inches, contains 1¾ pounds of carbon black.

Printing ink manufacturers use approximately 10,000,000 pounds per year. Carbon black is also used for manufacturing black and gray print, carbon paper, typewriter ribbons, phonograph records, shoe polish and electrical composition.

GAS NOW WASTING BID FOR INDUSTRIES

BLACKWELL, Okla., Dec. 3.—An effort will be made by the industrial committee of the chamber of commerce to induce industrial institutions seeking a location where fuel is plentiful to locate in Blackwell. It developed from a report made to the membership meeting of the chamber of commerce that there was now going to waste in the Blackwell Field more than 100,000,000 feet of natural gas each 24 hours.

This gas is allowed to blow off with no effort made to confine it because there is no market which is proving quite a heavy loss to those operating in the field. The Blackwell gas fields are more than 10 years old and at no time has there been a shortage since the original gas well was drilled in, and today, it is said, by those actively engaged in drilling, that there is more gas available than ever before.

The new field just north of the city limits is proving to be a large gas producing area and has several very large producing wells said to be of the highest B. T. U. test of any in the field.

WELLINGTON GASSER CONTINUES TO BLOW

CASPER, Wyo., Nov. 27.—The big gas well at Wellington, near Fort Collins, Colo., continues to blow; the leak that developed when the cap was placed is still coming up outside the casing and the crew is still pumping mud down between the different casings by hand in an ekort to shut off the flow on the outside of the pipe. There are four gates ready to be closed as soon as it is deemed safe to do so.

It appears that strenuous efforts are being put forth in Denver to obtain tracts of land near the big gasser by parties who are thought to be promoters wishing to form companies to sell stock. Already one charter for a company to lay pipe lines has been applied for and 70 applications have been filed with the Denver Federal land office by applicants who hope to upset titles to tracts claimed now by the Union Pacific. Chief McEniry of the Federal land office at Denver states that these applicants are in all probability throwing their money away as there is little or no chance of the titles of the Union Pacific being declared clouded.

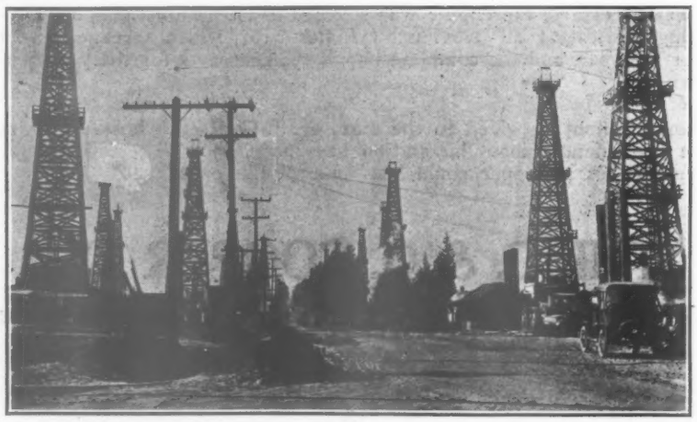
The charter asked for by a corporation to lay pipe lines to Fort Collins from Denver to obtain gas for Denver, has no authority from the Union Oil Co., according to statements here; this is merely a local coterie of men in Denver and the Union Oil Co. has no plan at present to sell its gas production to any local firm for distribution in Denver. The Union has enough capital of its own, if it chooses to do so, to lay its own pipe line to Denver.

Investors are warned that it appears as though Denver promoters would shortly throw a lot of stock on the market of incorporations that have holdings or clouded titles to lands in the Fort Collins district and the greater part of this stock will prove worthless.

GAS COMPANY CHANGES NAME

Wyoming Yellowstone Oil Co. has changed its name to Yellowstone Gas Products Corp. The concern has its headquarters at Thermopolis, Wyo. Besides furnishing gas to several municipalities, it has a gasoline works and carbon black plant.

TORRANCE FIELD, CALIFORNIA, BECOMING MORE ACTIVE



Redondo Boulevard, at Torrance Field, is as active a center as some of the boulevards in larger cities. The field, during the week ending November 24 increased its average daily production 60 per cent, jumping from 19,000 to 30,500 barrels.

Natural Gas Facts From Department of Commerce Yearbook

The Commerce Yearbook, just issued by the United States Department of Commerce has the following about natural gas:

The principal usage of natural gas has developed in the eastern part of the United States and, according to the United States Geological Survey, West Virginia is the production center of the territory extending from the Allegheny Mountains west beyond the Ohio-Indiana line and from northern Kentucky to Lake Erie. The Survey says that the complicated network of pipe lines in this territory form one of the most elaborate systems for the transfer of energy yet developed by engineering science. They cover a territory almost as wide and deal with quantities of potential energy almost as great as the proposed Boston to Washington electrical "superpower" system.

Figures for natural gas in 1922 are not yet available, the yearbook states, but this table shows the comparative consumption, prices to distributors and use in 1913, 1920 and 1921:

Years	Consump. m.c.f.	Dom. Pct.	Indus. Pct.	Av. price per m.c.f.
1913	581,808,239	38	62	$.1
1920	798,210,000	36	64	24.6
1921	662,052,000	40	60	26.4

There are more than 2,500,000 domestic consumers of natural gas and about 21,000 industrial consumers using it as a fuel. In 1921 the market value of the gas used was about $175,000,000 which was a decrease of about $25,000,000 from 1920, due to the decrease in production.

The wastefulness, the year book says, with which this fuel has produced, transported and used, due to its former abundance and cheapness has lately been partly realized and it is hoped that the consuming public, if only in the interest of self-preservation will cooperate with the distributors to an increasing degree in endeavoring to conserve a fast disappearing and immensely valuable natural resource.

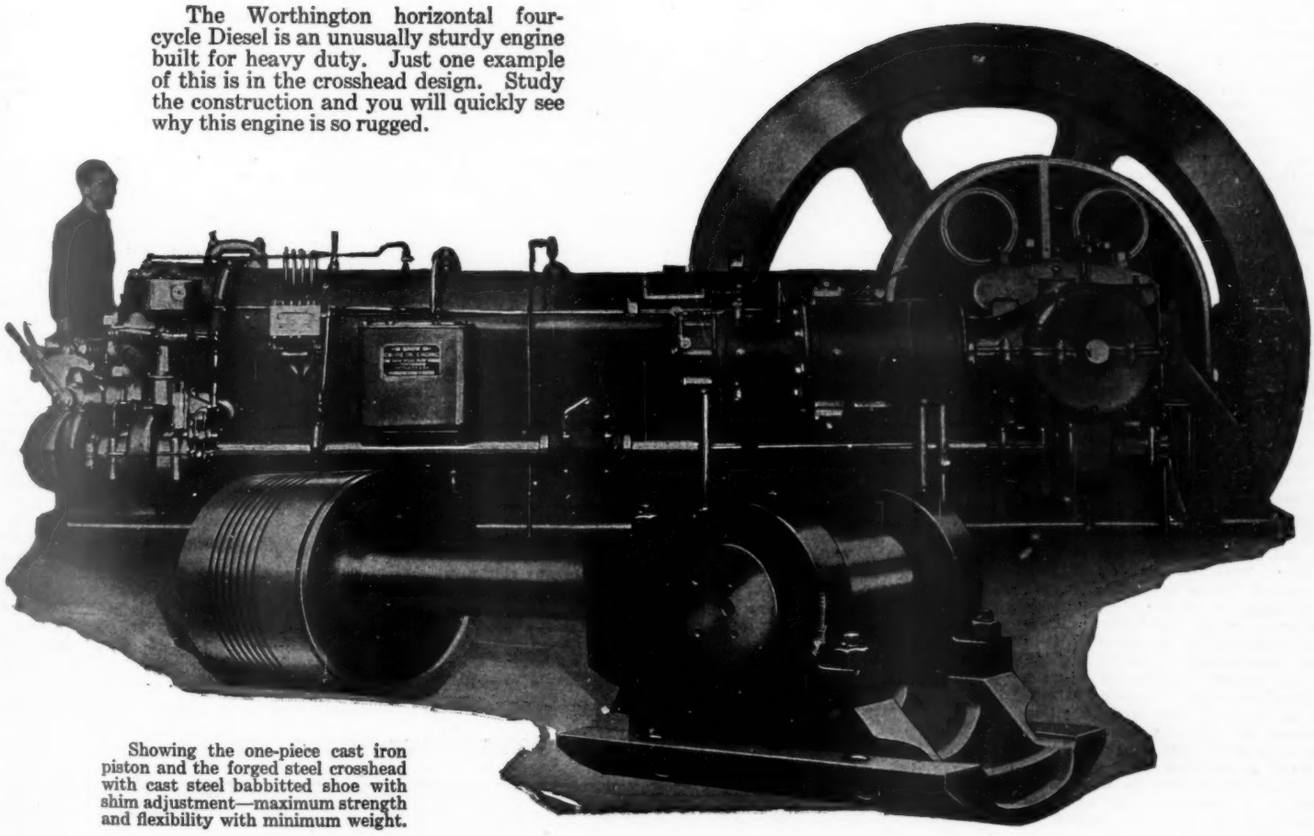
BETTER GAS MARKET FROM GLASS PROCESS

Using the "Fourcault Process" fires were started in the furnaces of the Continental Glass Co., at Cedar Grove, La., by Miss Kennon Henderson, daughter of W. K. Henderson, prime mover and a director of the reorganized company. The concern enjoys the distinction of being the first in the United States to start operation using this process, largely due to Louis Mottet, who made a trip to Belgium for the purpose of assembling the machinery and was enabled to anticipate the opening of six other plants in this country that have arranged to install the system. Mr. Mottet, who is a descendant of a long line of glass makers, came to Shreveport from Belgium several years ago and was instrumental in the organization of the National Glass Co., at Cedar Grove, which has recently been reorganized as the Continental Glass Co. The opening up of this new plant is of interest to gas producers in the Shreveport area as it is expected it will operate continually throughout the year instead of only three or four months as was the practice under the old process.

The formal opening by Miss Henderson was witnessed by her father, mother and grandmother, Mrs. M. L. Carter, Ward Delaney and William B. Wahr, research engineer.

A Heavy Duty Engine With a Forged Steel Crosshead

The Worthington horizontal four-cycle Diesel is an unusually sturdy engine built for heavy duty. Just one example of this is in the crosshead design. Study the construction and you will quickly see why this engine is so rugged.



Showing the one-piece cast iron piston and the forged steel crosshead with cast steel babbitted shoe with shim adjustment—maximum strength and flexibility with minimum weight.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Executive Offices: 115 Broadway, New York City. Branch Offices in 24 Large Cities

W-204.8

WORTHINGTON

Deane Works, *Holyoke, Mass.*
Blake & Knowles Works *East Cambridge, Mass.*
Worthington Works *Harrison, N. J.*
Laidlaw Works, *Cincinnati, Ohio,*
Hazleton Works, *Hazleton, Pa.*
Gas Engine Works, *Cudahy, Wis.*
Power & Mining Works *Cudahy, Wis.*
Snow-Holly Works *Buffalo, N. Y.*
Epping-Carpenter, *Pittsburgh, Pa.*

EQUIPMENT AND SUPPLIES

Centrifugation Is Aid in Holding Up Gravity and Volume

A big saving both in volume of oil and in the gravity are the advantages claimed for De Laval Crude Oil Purifiers over the old heating methods in dehydration as set forth in an article in the current number of the De Laval Centrifugal Review.

Summarizing a report issued by the Bureau of Mines, which finds that the greatest evaporation losses are due to dehydration by heating, the article states:

"It is shown that the three phases of dehydration work which can cause the greatest losses by evaporation are, in the order of their importance, the temperature to which the oil must be brought in order to accomplish dehydration; the length of time which the oil must be held at that temperature, and the area of oil which is exposed. De Laval Crude Oil Purifiers greatly reduce all of these losses. In the first place, the oil need not be brought to so high a temperature. It is found that centrifugal dehydration is accomplished with the oil at a temperature many degrees lower than that necessary where a gravity settling method is employed. Only a small amount of oil is heated at one time and its temperature is maintained only long enough to get it through the purifiers. In this case it will be seen that there is absolutely no chance for evaporation to take place except perhaps in the machine itself, and since De Laval Purifiers are equipped with closed connections at both the oil inlet and outlets, such losses must be exceedingly small.

"Right now, when cold weather is coming on, the installation of De Laval Crude Oil Purifiers is more economical than ever. With the steaming and settling method, losses of oil in b.s. are always highest in winter, and on some leases even partial purification cannot be accomplished by this means. Centrifugal purification is practically immune to outdoor temperature changes and, therefore, makes it possible to keep losses at the same low level in either the winter or summer months.

The principal feature of the De Laval machine is a revolving bowl—the member in which the purification takes place—which is so constructed as to divide the incoming oil into thin layers or sheets so that it is in the condition which enables water and solid impurities to be most easily removed.

GAVE QUICK SERVICE

CASPER, Wyo., Dec. 3.—Ivan E. Marshall, representative of the Westcott Valve Co. in the Rocky Mountain region, shipped some heavy equipment to Wellington, Colo., for the Union Oil Co. to be used in harnessing its 100,000,000-foot gasser. Included in the equipment shipped from Casper was an 8¼-inch gate valve weighing 1,320 pounds.

MORE ROTARY TOOLS

Rotary tools seem to be gaining in favor in several Oklahoma districts. Reports from Wewoka show that there are 10 rotary outfits in that field, with 7 others on the way from one company alone. The Gypsy Oil Co. and the Comar Oil Co. are also said to be shipping 15 rotary outfits into the Tonkawa Field for new tests.

BUYING OF STEEL EXPERIENCING PERIOD OF SEASONAL QUIETUDE

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 3.—Buying of steel has grown moderately light as to some mill products and very light as to others. The market as a whole is decidedly inactive. There are two reasons for the quietness in the market:

(1) As to buying for prompt shipment, to meet current needs, all consumers are anxious as usual to have their inventories as light as convenient January 1. Such stocks as buyers may have are being drawn on as far as possible. This condition is altogether seasonal.

(2) There is an indisposition to make forward commitments, because business men generally are conservative at this time, because steel prices are quite unlikely to advance, and may possibly decline and because there is really no need to buy ahead since mills can make prompt shipment on new orders as they come and the railroads are moving shipments expeditiously. Thus there is scarcely any buying of steel products for third quarter. Exceptions are rails, which have been bought quite fully for the first half of the new year, and tin plate, in which there are in the aggregate fairly large commitments. The leading tin plate interest is filled for the half year while the independent mills have much less business.

Specifications have been fair on old contracts but there is not much of this old business left. Mills are now running on such specifications and on recent orders, while present bookings presage further declines in steel production as the year-end is approached. Mill operations are a trifle lighter this week than last, but still lie in the neighborhood of being 20 per cent below the peak rate of last April and 20 per cent above the average rate of 1919 to 1922, inclusive.

In the past fortnight there has been a general buying movement in foundry pig iron throughout the country. This buying movement has had more or less of a favorable sentimental influence upon the steel market, but has no direct connection, as very little steel making pig iron was bought. The foundries bought because prices had been declining more or less steadily since the last buying movement, in March, and were thought to have reached bottom, with a decline of about $10 a ton. Between 600,000 and 7000,000 tons of pig iron was bought, and the buying makes it practically certain that declines are arrested. Some furnaces, in fact, have advanced their asking prices slightly.

Unlike pig iron prices, finished steel prices in general are at the level reached by the advances that ended last April. Sheets have been shaded a trifle for several months, but even now the shading does not amount to much, and is only on prompt shipments. The steel market turned relatively quiet last April, and price declines were expected by many observers before this time. The present outlook is that tubular goods, wire products, sheets and tin plates will hold indefinitely, while bars, shapes and plates may decline soon. They are very firmly held now but there is not much of a test since inquiries are for such small tonnages as to constitute practically no temptation.

The pipe mills continue to run practically full. Shipment of oil country goods have been decreasing for several months but have not stopped by any means, and are now probably at least one-half as heavy as at the maximum. The National Tube Co. is nearly through with its line pipe orders but is still running all its lap weld furnaces. In merchant pipe there continues to be a very heavy demand. Neither mills nor jobbers have any stocks, which they should have, and if consuming demand lets up in the winter mill operations will probably continue practically full to build up stocks.

Pipe mills think the worst of the scare is over as to overproduction of oil and that a fair demand for oil country goods will develop in early spring.

Oil tank buying has continued very light. The Standard Oil Co. has placed 13 tanks, involving 600 tons of steel, with the Graver Corp., for erection at Casper, Wyo., and has some more orders to place for there.

ENLARGE REPAIR PLANT

The Independent Equipment Corporataion of Chicago has purchased the plant of the Goodwin Car & Manufacturing Co., located at Clearing, Ill., and has arranged for additional machinery and facilities, which will fully equip the shop to take care of all kinds of railroad freight car repairs.

The plant covers an area of 25 acres and when these additional facilities are installed, it will be one of the most modern and up-to-date car repair plants in the country. The company specializes on the leasing and repairing of tank cars, and also manufactures miscellaneous car parts.

M. P. Kraffmiller is president of the company, and J. E. Tesseyman is vice president and general manager. Practically all of the officers have devoted from 15 to 25 years to the development of the freight car industry, and their experience in tank car problems, as well as in the building and repairing of parts for freight cars, enables them to render a valuable service to the trade.

LOS ANGELES CONSTRUCTION

Expenditure of more than $16,000,00 is called for by construction and development plans contemplated by oil and steel companies and corporations, according to Edgar McKee, president Los Angeles Board of Harbor Commissioners. The programs include refineries, pipe lines, additional storage, wharfage and loading stations. Pan American Petroleum Co. leads in proposed developments with $3,000,000 for alloted program; Union Oil, $2,500,000; Shell Co. of California, $1,250,000; Associated Oil, $750,000; Standard Oil, $25,000; Crump Steel, $200,000; Pacific Coast Borax, $3,000,000; miscellaneous improvements and plants total $3,500,000.

SUPPLY MEN WERE RIGHT ON THE JOB

Representatives of various firms which provide equipment and supplies for the natural gasoline industry, were among those who attended the recent Fall Conference of the Association of Natural Gasoline Manufacturers in Fort Worth, Tex.

Why Ajax Engines Stand the Gaff

AJAX ENGINES

Fifty years' experience in the oil fields has proven that precise workmanship makes a more responsive and powerful engine. All moving parts of Ajax Engines are ground to close limits and checked with master gages. Recent improvements also include larger main bearings and the new outboard bearing. Ajax Drilling Engines endure the strain of deeper drilling and rougher handling.

Distributed by
National Supply Companies
in every oil field

Manufactured by
AJAX IRON WORKS
Corry, Pa.

AJAX DRILLING ENGINES

Insist on Genuine Ajax Replacement Parts

3458

MEN KNOWN IN OILDOM

M. J. Flanagan

M. J. Flanagan, of Tulsa, vice president of the Gaso Pump and Burner Manufacturing Company, and the Tulsa Iron Works, and widely known in the oil industry, was born in Bradford, Pa., February 26, 1882, and has been a resident of the Eastern and Western oil fields throughout his life. He attended St. Bernard's school in Bradford and was first employed in supply shops in that city, but he decided to cast his fortunes in the Mid-Continent Field and in 1902 went to Independence, Kans., and entered the employ of the Bovaird Supply Co. Later he joined the force of the Prairie Oil & Gas Co., and remained with that company until 1916, the last five years having been spent in Tulsa, during which he was superintendent of the company's boiler shop.

"M. J." had long dreamed of being in business for himself and he made a reality out of his fancy in 1916 by assisting in the organization of the Gaso Burner Company, which began in a modest way, but made such rapid progress that it became known in every oil field. The company took up the building of pumps and was so successful in this that the pumps overshadowed the burners in importance and the corporate name was changed to the Gaso Pump & Burner Manufacturing Company

Later the Tulsa Iron Works was organized to provide castings for the pump works, and to do a general foundry business.

In the Gaso Pump & Burner organization the genial Mike with his never failing optimism, his business courage and his very agreeable personality has been a tower of strength. He has traveled much in the interest of the company and wherever he has gone has made friends for himself and the organization.

While most of his attention is devoted to manufacturing he has also watched the trend of oil development carefully and has been successful in the production of oil. He has a beautiful home on Tulsa's North side, where he and Mrs. Flanagan, who was Miss Frances Nolan of Bradford, entertain hospitably.

PERSONAL PARAGRAPHS

J. Elmer Thomas of Chicago, a consulting geologist, was a Tulsa visitor last week.

* * *

Henry G. Lapham of Boston is making his annual visit to the oil fields of California.

* * *

George H. Myers of the Waite Phillips Company, Tulsa, has gone to Altoona, Pa., on business.

Charles H. Lay, retired treasurer of the National Transit Company, Oil City, visited Pittsburgh last week.

* * *

Mr. and Mrs. James Murray, of Cleveland, Okla., were visitors in Tulsa several days last week.

* * *

Grover Hummon, after spending a year in Persia as an oil worker has returned to his home at Findlay, Ohio.

* * *

Walter M. Dunham, internationally known statistican of the petroleum industry, is in Ponca City, Okla., on business.

* * *

H. H. Champlin, president of the Champlin Refinish Company of Enid, Okla., was in Tulsa recently on business.

* * *

Harry E. Thorpe, Tulsa representative of the Gentz Tank Company, spent several days last week in the Tonkawa Field.

* * *

W. B. Sutton of the Prairie Oil & Gas Company, Tulsa, spent several days in Texas recently in the interest of the company.

* * *

W. L. Kistler, president of the Producers & Refiners Corporation, spent last week in Chicago on business for the company.

* * *

George D. Locke, vice president of the Barnsdall Refining Company, spent several days last week in the Tulsa office of the company.

* * *

Carl Egner, of Tulsa, purchasing agent for the Pure Oil Company, was married November 5 to Miss June Walker, of Joplin, Mo.

* * *

Victor H. Smith, vice president of the Lion Oil & Refining Company, has changed his office to El Dorado, Ark., from Kansas City, Mo.

* * *

H. P. Price, of the Pure Oil Company, Tulsa, spent last week in the fields near Bristow, Okla.

* * *

H. L. Pollvogt, president of the Pollvogt Gasoline Company of St. Louis, visited for several days in Tulsa as the guest of D. E. Foster.

* * *

John Hall, of Pawhuska, who has charge of the natural gasoline interests for the Osage Indian Agency, was in Tulsa on business recently.

* * *

William N. Davis, president of the Mid-Continent Oil & Gas Association, of Bartlesville, Okla., was in Tulsa a couple of days last week on business.

* * *

Harry Heasley, of the Oklahoma Natural Gas Company, and prominent producer in the Mid-Continent fields, is visiting the home office in Pittsburgh.

* * *

F. W. Burford, assistant sales manager for the Skelly Oil Company, has returned to Tulsa from the East, where he made an extensive business trip.

* * *

C. M. Lamason of Tulsa, western manager of refinery sales for the Pure Oil Company, went to Ardmore, Okla., on business for the company last week.

* * *

F. A. Cattell, of the United States Bureau of Mines, has returned to Bartlesville, Okla., after completing some extensive experimental work in the field.

* * *

Edmund Burke, of the Crane Company, of Chicago, has returned to Chicago from an extended trip to various cities and fields in the Mid-Continent and Mexico.

* * *

F. J. Bradford of Tulsa, president of the Bradford Rig & Reel Company, spent several days in Casper, Wyo., recently calling on the important oil companies there.

* * *

George N. Moore of Chicago, president of the Moore Refining Company of Arkansas City, Kans., was in Tulsa recently with an optimistic outlook in regard to conditions in the refining industry. He believes that the coming spring will find a great improvement in the situation.

* * *

R. S. Lord of Mt. Vernon, Ohio, president of the Hope Engineering & Supply Company, is touring the oil fields of Montana and California, accompanied by Mrs. Lord.

* * *

H. R. Leland has been appointed district representative of the Columbian Steel Tank Company, of Kansas City, in charge of the newly-opened office of the company in Tulsa.

* * *

H. L. Mourer, vice president of the Peer Oil Corporation, will be located in Tulsa permanently after the first of the year, and will direct the company's operations in Kansas and Oklahoma.

* * *

C. O. Jensen, representative in the Mid-Continent district for the Kaw Boiler Works Company, of Kansas City, Kans., has opened permanent headquarters in Tulsa at 214 Tuloma Building.

* * *

S. R. Scivally, manager of the Tulsa office of the Sinclair Refining Company and the Union Petroleum Company, has gone to Hot Springs, Ark., where he will stay for several weeks.

* * *

H. L. Lawler, superintendent of production of the Skelly Oil Company, has returned to Tulsa from the Powell Field of Texas, where he spent a couple of weeks directing operations on the Skelly lease.

* * *

W. L. Christians, of Denver, assistant to President Sid Keoughan of the Mutual Oil Company, and formerly in charge of the operations of The Texas Company in Montana, was a Casper visitor last week.

* * *

M. J. Kirwan and C. O. Rison, of the United States Bureau of Mines, conferred with officials of the Five Civilized Tribes at Muskogee, Okla., recently about some work requiring the cooperation of both offices.

* * *

D. P. Wardwell, petroleum engineer of the United States Bureau of Mines, has been sent to Bartlesville, Okla., from Drumright, where he has been stationed. He will make special studies in the Lyons-Quinn Field in Oklahoma.

* * *

J. T. Mason, a former resident of Oil City, Pa., and now collecting data and statistics on the oil industry in the Rocky Mountain region, was in Casper for a few days recently. Mr. Mason is now located with the Ohio Oil Company here.

* * *

M. B. Hitchcock, vice president of the Ever-Grip Wrench Company, Chicago, Ill., was in the Mid-Continent territory during the past week visiting the leading supply concerns in the interest of his concern.

* * *

Ira G. Wetherill, vice president of the National Supply Company, with headquarters at Independence, Kans., was a Casper visitor over the week-end looking over the business of the National's store here and at other points in the Rocky Mountain region.

* * *

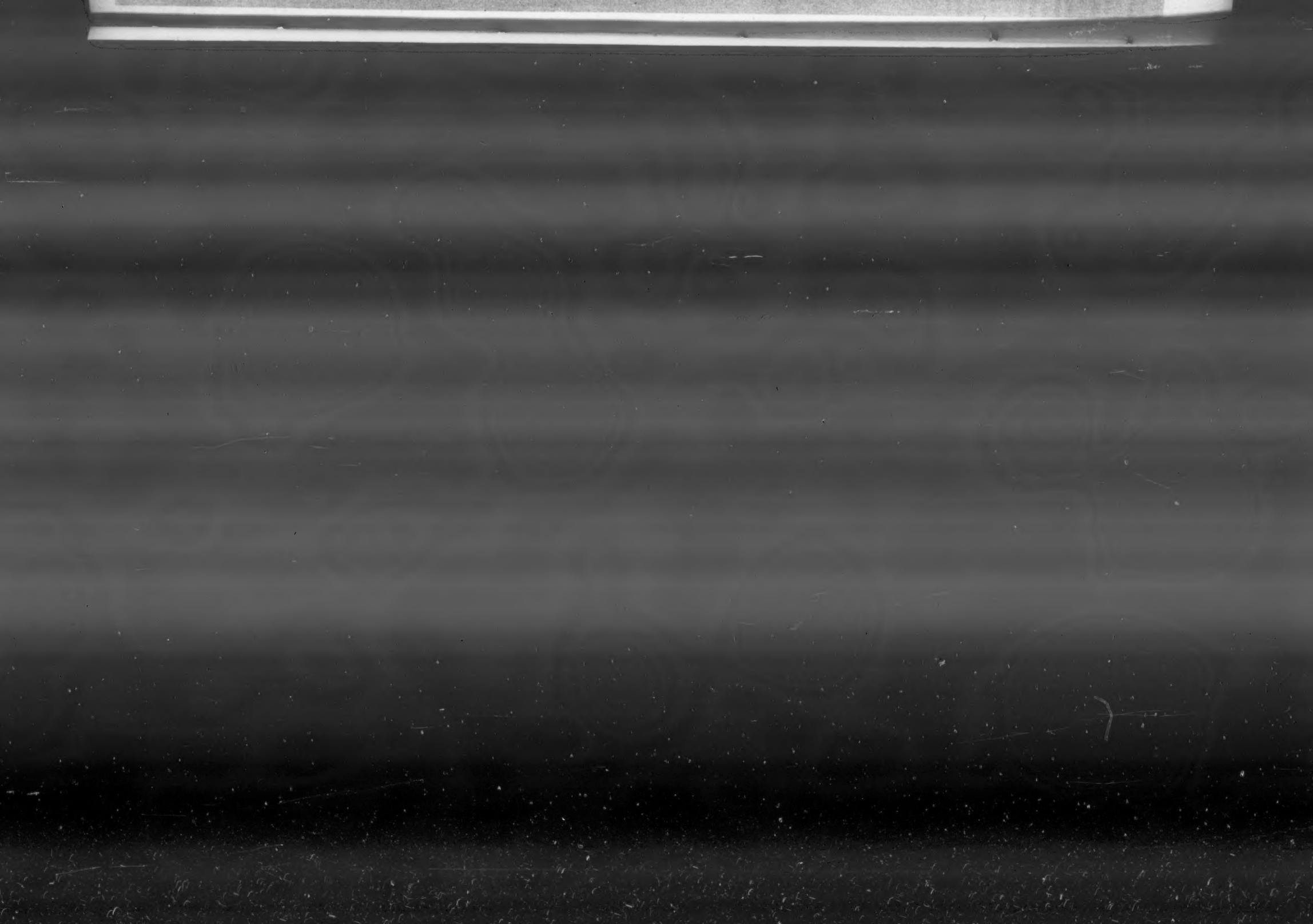
George L. Ferguson, superintendent of operations of the Marine Oil Company, has returned to Casper from an extended trip through the California fields, where he studied the last drilling methods and gathered information on the oil industry in that State.

* * *

H. F. Montgomery, president of the Crown Oil & Refining Company, subsidiary of the White Oil Corporation, has announced his resignation, effective January 1. He will resume the practice of law, specializing in oil and gas legal matters, with offices in Houston.

* * *

George McColl and James Donald of Petrolia, Ont., have left for the Persian fields. Both have already spent six years in Persia. Arthur Wilson, who has been with the International Petroleum Company in Colombia for the past two years, has returned to Petrolia.



The Oil and Gas Journal
Rotogravure Section

LOUIS BROWN

President of the Oil Well Supply Co., Pittsburgh, Penna.

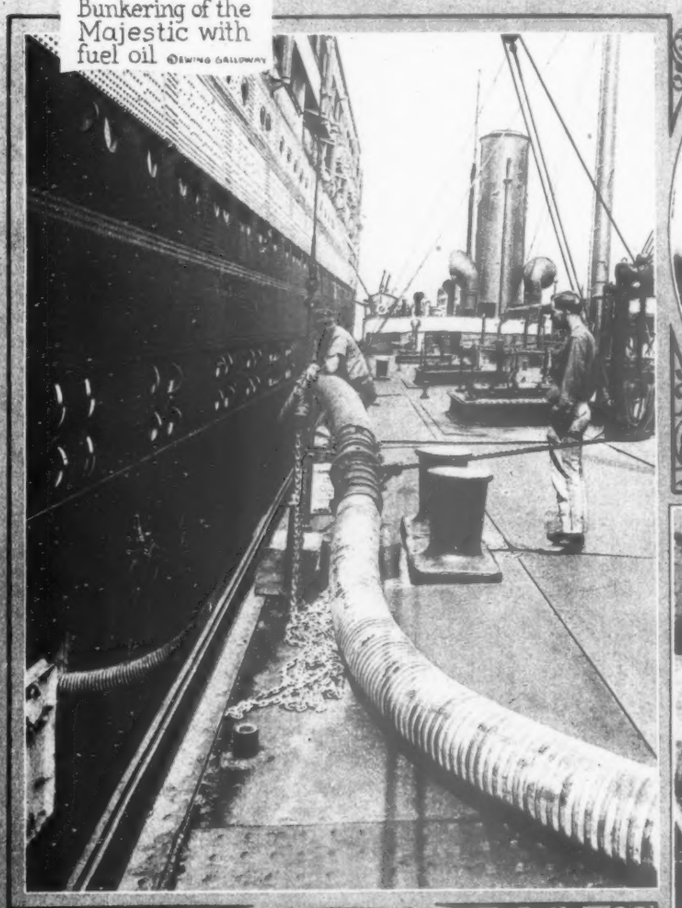
Born in New York City December 22, 1861. Started his business career in the offices of John E. White & Co., iron merchants of New York City, and later went to Germany as their representative, locating at Dresden, where he remained for two years. On his return to New York he entered the employ of H. F. Taintor & Co., manufacturers of Paris white and whiting, and remained with them until 1889, when he joined the office force of the National Tube Works as assistant manager of their Pittsburgh office, remaining there until 1891. He then entered the employ of the Oil Well Supply Co. as assistant treasurer, which office he held until 1895, when he became treasurer of the company, and he held this office until the death of John Eaton, the president in 1911, succeeding him as president of the company, which position he still holds.

He is sole executor of the estates of Mr. and Mrs. John Eaton, is president of the R. H. Herron Co. of Los Angeles, Calif., president of the Pickett Hardware Co. of Warren, Penna., president of the Cia Consolidada "Oilwell" S.A. (Oil Well Supply Co. of Mexico), as well as president of the Oil Well Supply Co.

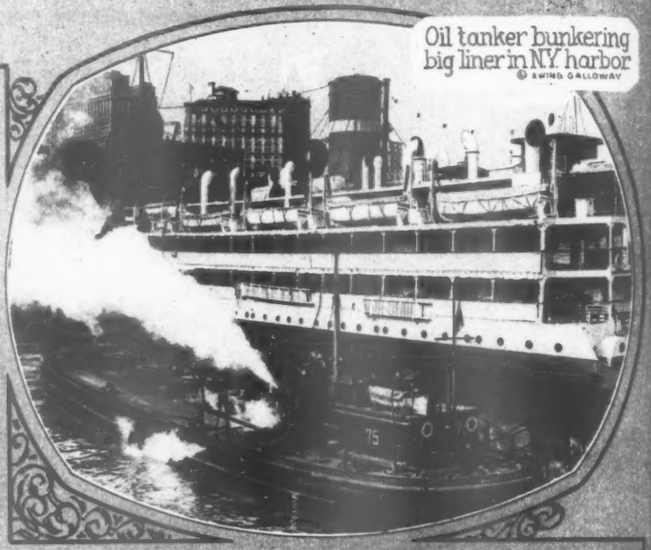
Photograph by Johnston Studios

The wonderful progress made in the development of the oil industry, together with the extensive improvements perfected in all forms of engines and equipment for using, transporting and carrying petroleum products, is exemplified in the pictures below showing the old and new methods of bunkering ocean liners. In coaling the steamship *Mongolia*, hundreds of coolies labored for hours loading and carrying the baskets filled with coal from barges alongside the big vessel up the sides of the ship and into the hold. It was not only an endless chain of perspiring human beings, each carrying a pitifully small load in comparison to the needs of the steamship, but the task of bunkering the vessel seemed almost like an endless job. All of this in addition to the vast amount of dirt and grime incident to such bunkering, and the great waste of time needed for such an operation.

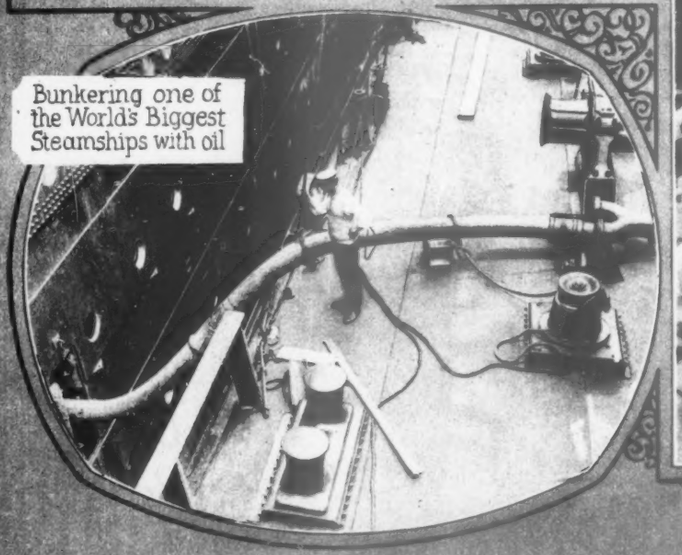
Contrast this with the modern method of bunkering the *Majestic*, the 56,000 ton liner of the White Star Line, and nearly four times larger than the *Mongolia*. A modern oil tanker with a ten-inch or eight-inch hose and a high powered pump do the work in several hours without leaving any trace of dirt, grease or grime. The big fuel oil tanker was alongside the *Majestic* a short time after the liner berthed and it was a very simple matter to start the pump going and transfer the fuel oil through the hose from the tanker to the ocean liner.



Bunkering of the Majestic with fuel oil ©EWING GALLOWAY



Oil tanker bunkering big liner in N.Y. harbor ©EWING GALLOWAY



Bunkering one of the World's Biggest Steamships with oil

Coaling S.S. Mongolia

Thirty Centuries in Conquest of Pressure and Temperature

When King Solomon built his Temple, he had to drive a tortuous tunnel through bedrock in order to conduct fresh water through the hills of Jerusalem. The Romans adopted the same practice, building picturesque aqueducts across valleys and saving their limited supply of bronze and lead for service piping to their fountains and baths.

The four-foot cast iron piping installed in New York in 1843 as feeder water mains from the Croton aqueduct, marked a great advance in sanitary engineering of that period. Only seventy-five years later, steel piping and valves afforded the necessary high pressure equipment to make possible the short contour route of the Los Angeles aqueduct.

Now, engineers draw on standard suppliers for piping materials to satisfy all industrial requirements. From the regular line of valves, fittings, piping and specialties supplied by Crane, they can obtain every needed item—from valves and specialties of ferrosteel for their refrigeration plants to units of cast steel and monel metal for high pressure superheated steam where total temperatures may reach 800 degrees or for hot oil at 600-pound pressures and temperatures of 900 degrees.

ROMAN AQUEDUCT AT NIMES BUILT DURING THE REIGN OF AUGUSTUS ABOUT 50 B. C.

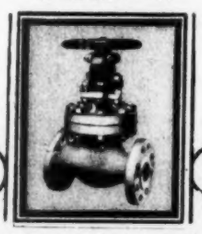
LOS ANGELES AQUEDUCT AT "NO NAME" CANYON. CAPACITY 280,000,000 GALLONS PER DAY.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVE., CHICAGO

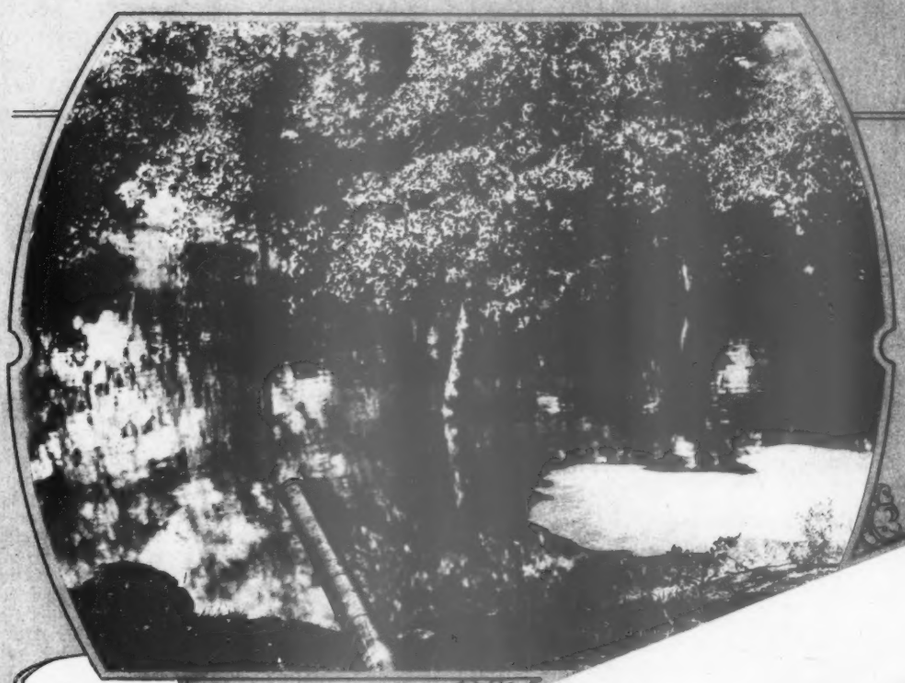
Branches and Sales Offices in One Hundred and Forty Cities
National Exhibit Rooms: Chicago, New York, Atlantic City
Works: Chicago, Bridgeport, Birmingham, Chattanooga and Trenton

CRANE LIMITED, MONTREAL. CRANE-BENNETT, LTD., LONDON
CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO
Cie CRANE, PARIS



CRANE "SERIES 75" CAST STEEL WEDGE GATE VALVE NO. 1205-H—FOR STEAM WORKING PRESSURES OF 750 POUNDS AND TEMPERATURES AS HIGH AS 800 DEGREES, FAHRENHEIT; HOT OIL WORKING PRESSURES UP TO 600 POUNDS AND TEMPERATURES TO 900 DEGREES; COLD WATER, OIL OR GAS WORKING PRESSURES UP TO 1500 POUNDS.

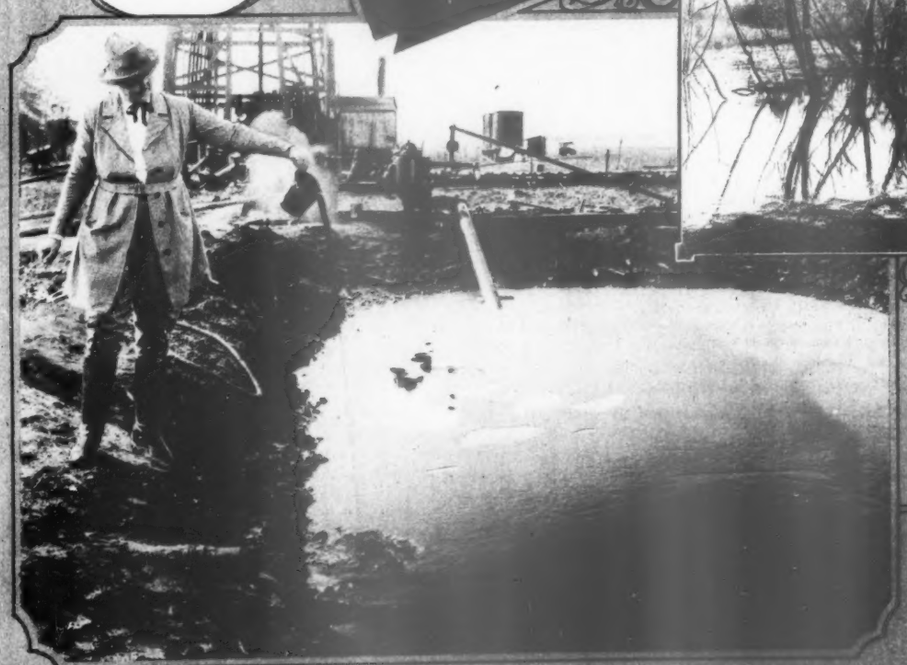
Too Much Oil



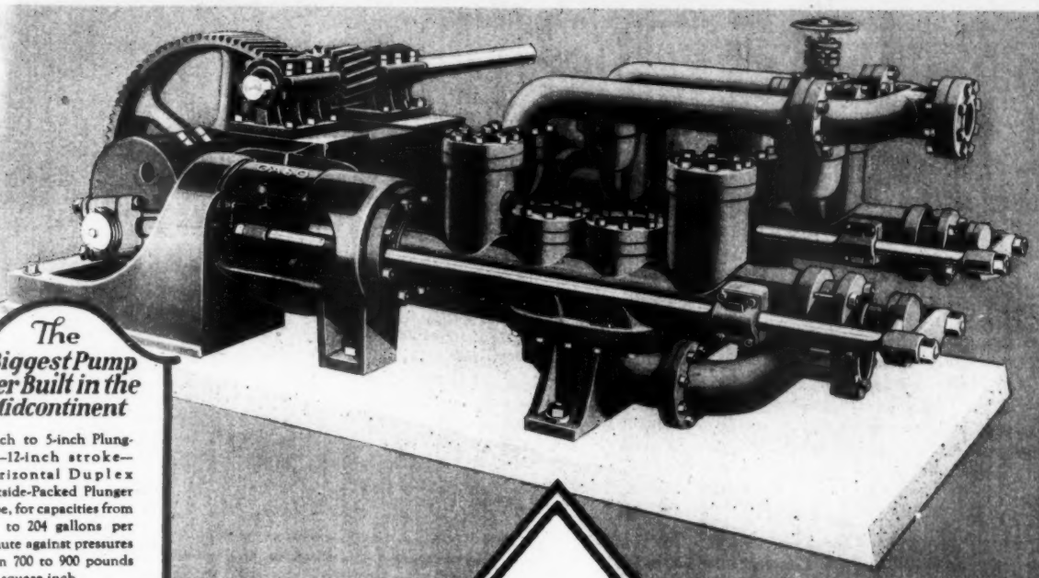
Even the woods are full of oil in Desdemona, Texas
Photo by United Oil Photo Service

Earthen Tank in course of construction at Smackover, Arkansas

Scene in field at Barber Hill, Texas
Photo by Allen



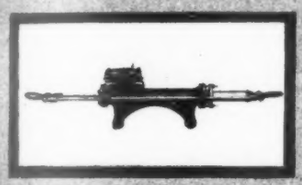
Open storage of oil in Warren County, Kentucky

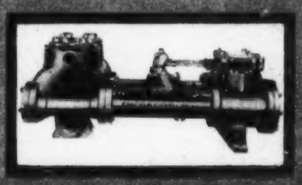


The Biggest Pump Ever Built in the Midcontinent

4-inch to 5-inch Plungers—12-inch stroke—Horizontal Duplex Outside-Packed Plunger Type, for capacities from 130 to 204 gallons per minute against pressures from 700 to 900 pounds per square inch.

Chosen by the Leaders Because it also Leads



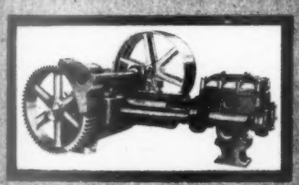


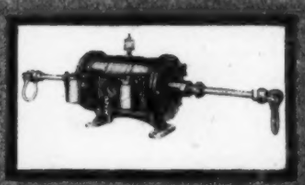
Prairie Pipe Line Co.
Sinclair Pipe Line Co.
Texas Pipe Line Co.
Magnolia Refining Co.
Pierce Oil Corporation
White Eagle Oil & Refining Co.
Paragon Refining Co.
Carter Oil Co.
Mammoth Oil Co.
Midwest Refining Co.
Central Pipe Line Co.
Cosden Pipe Line Co.
Humble Oil & Refining Co.
Gulf Pipe Line Co. of Ia.
Standard Oil Co. —

and many others are using Gaso Pumps. *There must be a reason!*

Send for 64-page catalog.

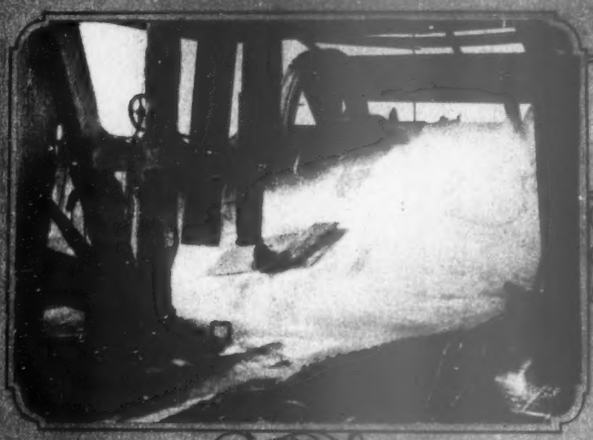
GASO PUMP & BURNER MFG. COMPANY
Tulsa





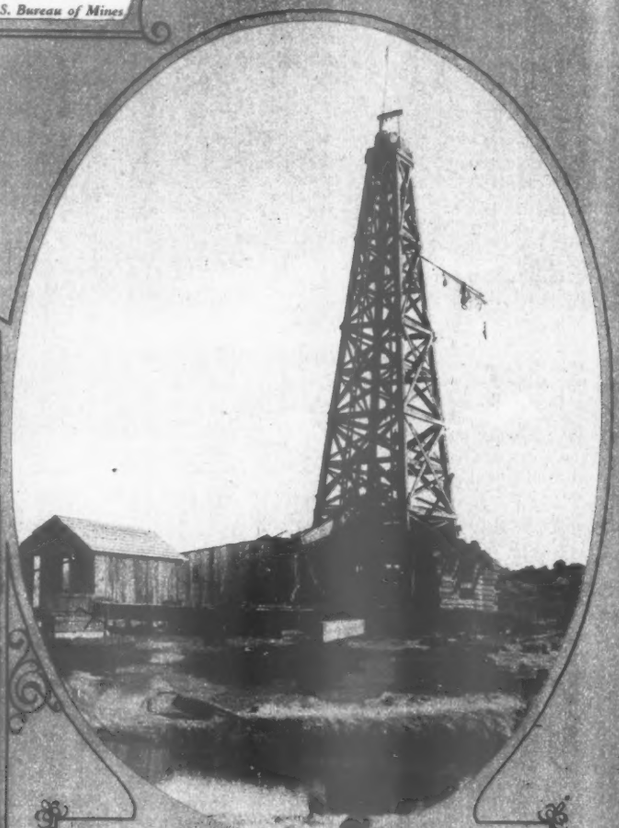
GASO PUMPS

for oil field uses



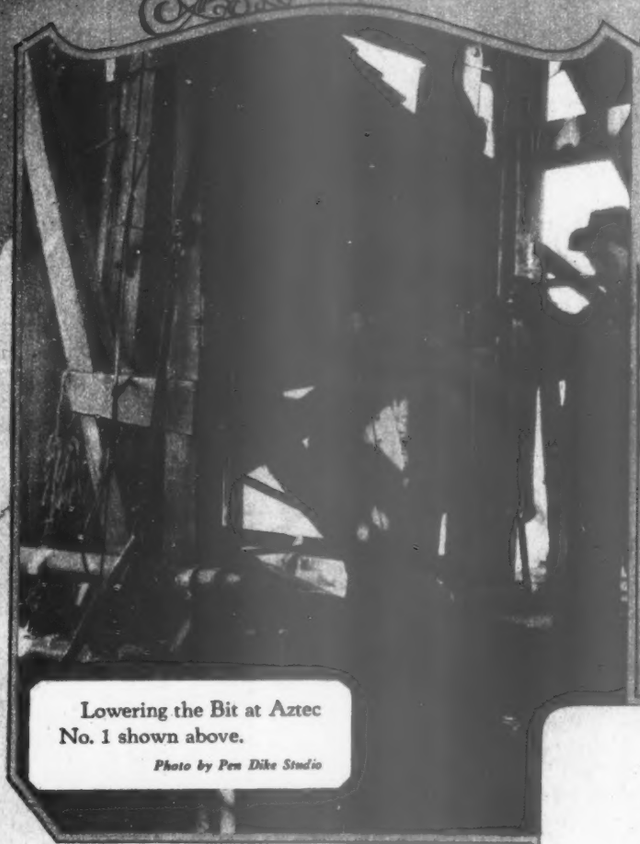
View showing salt water flowing from "wild" gas well, Anders and Corey well, Haskell, Okla.

Photo U. S. Bureau of Mines



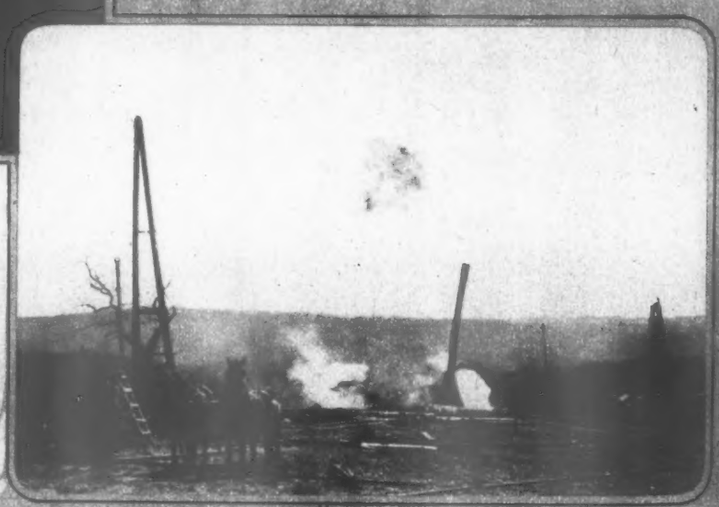
Well No. 1 Aztec Gas & Oil Co., Aztec N. M. Made 4,500,000 ft. wet gas at 890 feet —4 bbls. 57 test oil at 1130 feet.

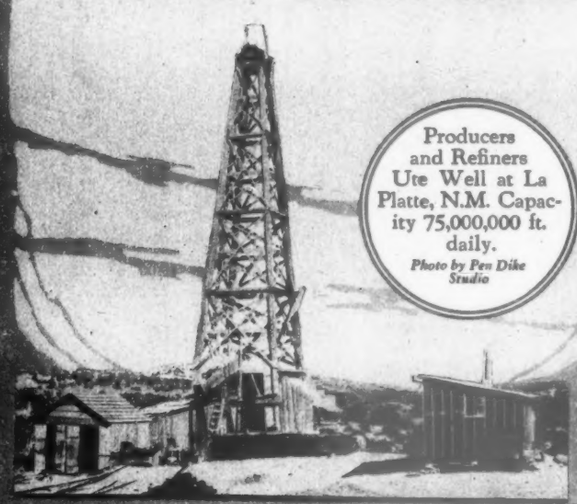
Photo by Pen Dike Studio



Lowering the Bit at Aztec No. 1 shown above.

Photo by Pen Dike Studio



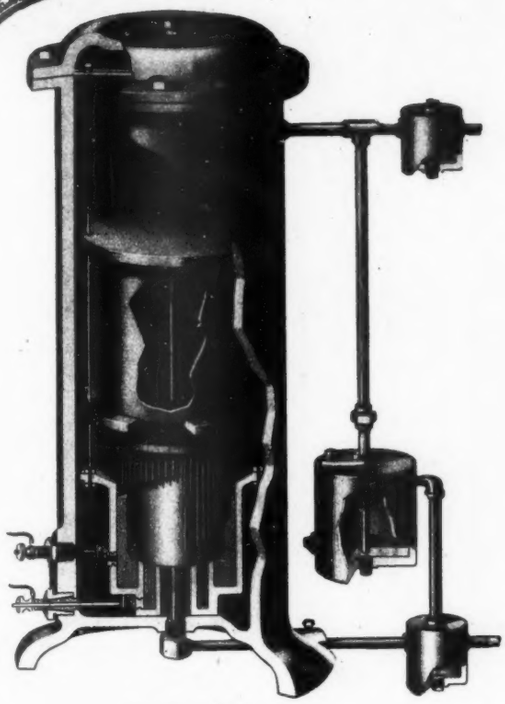


Producers and Refiners Ute Well at La Platte, N.M. Capacity 75,000,000 ft. daily.

Photo by Pen Dike Studio

Putting hood on gas well in Oklahoma.

Photo U. S. Bureau of Mines



Gas Meter Body

A broken away section which shows the float with its graduated nickel contact wires that are progressively withdrawn from the mercury as the float rises. At the right are the moisture traps and the pressure shunt. To the left are the electrical connections leading to the recorder.

The Electrical Recorder

The instantaneous rate of flow, the graphic record and the total flow are shown by the indicator, the chart and the integrating dials respectively.

Four 12" Hyperbolic Elbows at the Kansas City Gas Company.

The set of small pipes shown at the upper corner convey the pressure difference indications from the Hyperbolic Elbows to their respective meter bodies.

Direct Reading
Accuracy
Distant Recording

The Hyperbo-Electric Flow Meter enables you to forget planimeters and corrections and read the *actual* volume in cubic feet, gallons or any desired unit of Natural Gas, Casinghead Gas, Crude Oil, Gasoline, Still Vapors, Distillate or Steam that is being produced at any point in your plant.

Recording can be at a distance from scene of operation. Hyperbo-Electric Flow Meters are recording flow five and six miles from the location of meter bodies.

They are accurate beyond compare—corrections are automatically and continuously made for variations in temperature, pressure and specific gravity.

They are rugged, dependable, simple in operation.

Complete information is contained in technical bulletins and catalog that will be mailed on request.

SUCCESSORS TO SARGENT STEAM METER CO.

HYPERBO-ELECTRIC FLOW METER CO.

STEAM, GAS, WATER, OIL AND EFFICIENCY METERS

207 SOUTH GREEN STREET CHICAGO

12-6-

Hyperbo Electric Flo Meter Co., Chicago, I

Gentlemen:

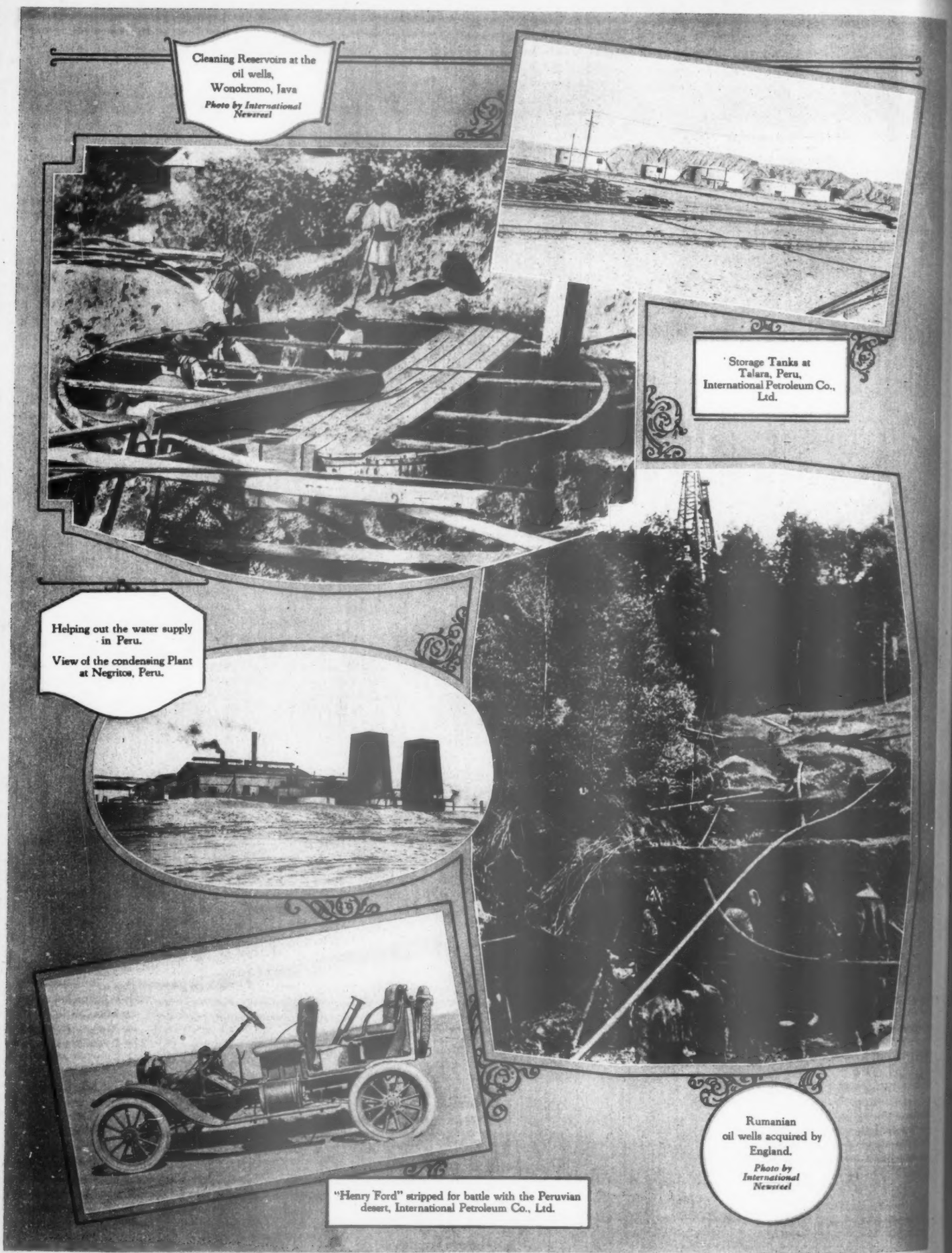
Please send me

☐ Theoretical Bulletins OT-1 OT-16

☐ General Description Catalog OW-1

Name .....

Address .....



Cleaning Reservoirs at the oil wells, Wonokromo, Java

Photo by International Newsreel

Storage Tanks at Talara, Peru, International Petroleum Co., Ltd.

Helping out the water supply in Peru.

View of the condensing Plant at Negritos, Peru.

Rumanian oil wells acquired by England.

Photo by International Newsreel

"Henry Ford" stripped for battle with the Peruvian desert, International Petroleum Co., Ltd.

D

NATIONAL

No. 3 Portable Drilling Rig

ALL AGREEMENTS SUBJECT TO STRIKES, FIRE, ACCIDENTS, AND OTHER CAUSES BEYOND OUR CONTROL.

THE KLISE-ECKSTEIN-McCANN COMPANY
INCORPORATED
CONTRACTORS AND PRODUCERS

OIL WELLS
GAS WELLS
DEEP WATER WELLS

WOOSTER
OHIO

PIPE AND CASING
WELL EQUIPMENT
DERRICK TIMBER

October 15,1923.

The National Supply Company,
Toledo,
Ohio. Attention Mr. C.W. Macho, V.P.

Dear Sirs:

In answer to your letter of recent date in regard to the No. 3 National Drilling machine, wish to state that we have drilled three wells to completion with an average depth of thirty-three hundred feet. We are now twenty-five hundred ~~deep~~ on our fourth well, and everything progressing satisfactory.

In the drilling of the above wells we have run approximately twenty-three to twenty-four hundred feet of 6 5/8" twenty-pound casing on the mast. We have only used the shear poles on the first well, and in this case in order to try them out, as we do not think it necessary to use shear poles for any amount of casing under three-thousand feet, providing the mast is properly guyed.

In comparison with the Standard Rig as to drilling time, we have found it practically on an equal basis, due to the fact that we have had a different crew and they all claim they can make as much hole with the No. 3 National Rig as with the Standard Rig.

We find that this No. 3 Rig sets very solid and eliminates the jumping so noticable in smaller Rigs. doing the work with ease, and can therefore recommend this outfit for drilling in the gas territory to the depth of thirty-five hundred feet, and in necessity up to four thousand feet.

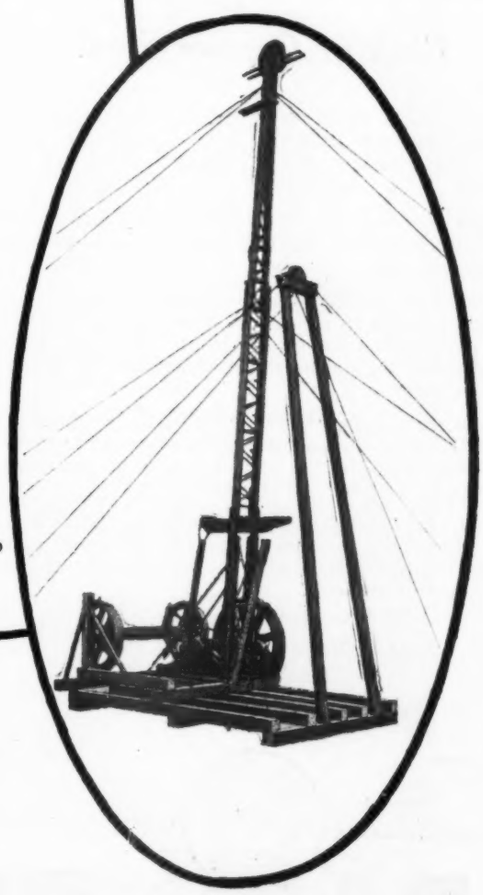
Very truly yours,

Klise-Eckstein-McCann Co

John J. Klise

General Manager.

Designed for drilling 3500 feet



THE NATIONAL SUPPLY COMPANIES

Patented Oct. 21, 1913

Double Protection Against Rust

Built of Copper Steel

MALONEY Tanks are made of the most highly rust-resisting steel known to science, namely Keystone Copper Steel, made by the American Sheet & Tin Plate Company.

This steel has more than DOUBLE the rust-resisting qualities of Blue Annealed plain steels or pure iron without the copper content.

Additional protection against rust results from our scientific painting by means of a fine spray of high grade black paint which forces the paint into every minute pore of the metal and fully seals it against the action of corrosive agents.

Industry's annual losses from rust are stupendous. Use MALONEY Bolted Steel Tanks, repainting them at reasonable intervals, and you can write off your losses from rusting of your bolted steel tanks.

Tight decks. Packed-joint manholes. Cleaning-out plates flush with bottoms. Vacuum Pressure Valves. Catalog C gives full information and specifications on these superior tanks.

MALONEY TANK MFG. CO.
Tulsa, U. S. A.

60 Bbls. to 3,000 Bbls. Inclusive

Prompt, Dependable Export Service

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY MALONEY

CRUDE PETROLEUM STATISTICS FOR THE MONTH OF OCTOBER, 1923

Daily average production of petroleum decreased in October for the first time since August, 1922, according to the Geological Survey, the average for the month (2,118,613 barrels) being 26,454 barrels less than that for September. The peak of the long-continued rise in production in California was reached in September, when the daily average was 858,750 barrels, whereas in October it fell to 792,787 barrels. The net decrease in the rate of production during October occurred in spite of continued flush production in the Powell Field, resulting in an increase in Texas of more than 70,000 barrels a day. During October daily average imports (222,516 barrels) increased 21,783 barrels; daily average exports (42,710 barrels) decreased 10,356 barrels, and daily average indicated deliveries to consumers (2,035,581 barrels) increased 20,715 barrels. The increased supply over demand caused an addition to stocks, exclusive of crude oil held by consumers, of 8,148,000 barrels, and on October 31, pipe line and tank farm stocks amounted to 315,356,000 barrels—a supply sufficient for 155 days at the current rate of deliveries to consumers.

PRODUCTION

The figures given below for the States east of California, compiled from reports made by pipe line and other companies to the Geological Survey, show the quantity of petroleum transported from producing properties. Petroleum consumed on the leases and produced but not transported from the producing properties is not included in the preliminary figures. These items are given in the final annual statistics, which show gross production—all the oil brought to the surface. The figures for California are those reported by the Pacific Coast office of the American Petroleum Institute and show gross production. Figures for 1923 are subject to revision, those for 1922 are final and include oil consumed on the leases and net increase of producers' stocks.

BY STATES

(Barrels of 42 U. S. Gallons)

	September, 1923		October, 1923		Jan.-Oct., 1923	Jan.-Oct., 1922
	Total	Daily Av.	Total	Daily Av.		
Arkansas	3,350,000	111 666	3,046,000	98,258	29,176,000	10,008,000
California	25,763,000	858,750	24,576,000	792,787	219,431,000	109,259,000
Colorado	5,500	183	5,200	168	56,800	81,900
Illinois	696,000	23,200	733,000	23,645	7,331,000	7,928,000
Indiana:						
Southwestern	63,000	2 100	64,000	2,065	671,000	709,000
Northeastern	24,000	800	28,000	903	215,000	203,000
Total Indiana	87,000	2,900	92,000	2,968	886,000	912,000
Kansas	1,836,000	61,200	2,166,000	69,871	23,461,000	26 781,000
Kentucky	670,700	22,357	686,400	22,142	6,806,600	7,571,300
Louisiana:						
Gulf Coast	194,000	6,467	187,000	6 032	1,892,000	1,408,000
Rest of State	1,661,000	55,367	1,674,000	54,000	18,845,000	28,774,000
Total La.	1,855,000	61,834	1,861,000	60,032	20 737,000	30,182,000
Montana	256,000	8,533	192,000	6,194	2,245,000	1,960,000
New York	140,000	4,666	115,000	3,710	1 034,000	835,000
Ohio:						
Central and East.	403,000	13,433	435,000	14,032	4,116,000	3,962,000
Northwestern	182,000	6,067	190,000	6,129	1,818,000	1,711,000
Total Ohio	585,000	19,500	625,000	20,161	5,934,000	5,673,000
Oklahoma:						
Osage County	2,783,000	92,766	2,564,000	82 710	32,199,000	30,829,000
Rest of State	8,765,000	292,184	8,891,000	286,793	102,666,000	92,653,000
Total Okla.	11,548,000	384,950	11,455 000	369,503	134,865,000	123,482,000
Pennsylvania	569,000	18,967	632,000	20,387	6,145,000	6,199,000
Tennessee	300	10	600	19	6,400	8,300
Texas:						
Gulf Coast	2,416,000	80,533	2,348,000	75 742	25,049,000	29,348,000
Rest of State	9,871,000	329,034	12,555,000	405,000	75,397,000	71,618,000
Total Texas	12,287,000	409,567	14,903 000	480,742	100,446,000	100,966,000
West Virginia	510,000	17,000	579,000	18,678	5,423,000	5,895,000
Wyoming:						
Salt Creek	3,481,000	116,034	3,268,000	105,419	28,247.000	14,836,000
Rest of State	712,500	23,750	741,800	23,929	6,579,200	6,270,100
Total Wyo.	4,193,500	139,784	4,009 800	129,348	34,826,200	21,106,100
Grand total	64,352,000	2,145,067	65,677,000	2,118,613	598,810,000	458,852,000

BY FIELDS

(Barrels of 42 U. S. Gallons)

	September, 1923		October, 1923		Jan.-Oct.	Jan.-Oct.,
	Total	Daily Av.	Total	Daily Av.	1923	1922
Appalachian	2,293,000	76,433	2,448,000	78,968	23,531,000	24,475,000
Lima-Indiana	206,000	6,867	218,000	7,032	2,033,000	1,914,000
Ill. and S. W. Ind.	759,000	25,300	797,000	25,710	8,002,000	8,637,000
Mid-Continent	28 266,000	942,217	30,896,000	996,632	281,744,000	260,663,000
Gulf Coast	2,610,000	87,000	2,535,000	81,774	26,941,000	30,756,000
Rocky Mountain	4,455,000	148,500	4,207,000	135,710	37,128,000	23,148,000
California	25,763,000	858,750	24,576,000	792 787	219,431,000	109,259,000
Total	64.352,000	2,145,067	65,677,000	2,118,613	598,810,000	458,852,000

STOCKS

Stocks of crude petroleum for statistical purposes are classified as follows:

1. Producers Stocks—Petroleum held on the producing properties (lease or "field" storage). Producers' stocks are reported to the Geological Survey annually and are included in the Survey's final statistics.

2. Pipe Line and Tank Farm Stocks—Petroleum that has been transported from the producing properties but not delivered at refineries or at other points of consumption and is held on tank farms, in tanks along pipe lines, and in the lines. Pipe line and tank farm stocks constitute approximately 90 per cent of the petroleum held in storage in the United States. For the States east of California such stocks are reported monthly to the Geological Survey as gross stocks, including the total contents of tanks and pipe lines, and as net stocks, which are gross stocks minus sediment and water. The stocks reported for California are compiled by the Pacific Coast office of the American Petroleum Institute and include producers' pipe line, and tank farm stocks (but not refinery stocks) of crude oil, residuum, and tops.

3. Refinery and Other Consumer's Stocks—Petroleum that has been delivered at refineries and at other points of consumption. Stocks of crude petroleum held at refineries are compiled by the Bureau of Mines.

PIPE LINE AND TANK FARM STOCKS OF CRUDE PETROLEUM ON LAST DAY OF MONTH—(Barrels)

Stocks are reported by fields of origin of oil, not by location of storage	Sept. 30, '23	Oct. 31, '23	Oct. 31, '22
Domestic petroleum:			
East of California: Gross and net pipe line and tank farm stocks:			
Appalachian:			
N. Y., Pa., W. Va., East. and Cent. Ohio:			
Gross	6,442,000	6,611,000	6,215,000
Net	6,150,000	6,333,000	5,956,000
Kentucky:			
Gross	3,193,000	3,144,000	3,019,000

From the Heart of the Pine Forests
INTERNATIONAL Creosoted Pine Poles are high grade poles that toe the mark in every detail. They cannot be otherwise, for, from the selection of the trees in the pine forests to the final treatment in the treating cylinders, every operation is carefully watched, minutely inspected and guided to successful completion.
Every International Pole is strong, durable, and of good appearance. Behind International judgment and sincerity of purpose stands the permanent I. C. C. Co. Dating Nail which identifies and connects the name of that Company with every International Pole during its entire life. The date is in plain figures.
Prompt shipment can be made from stock. In your orders or inquiries designate lengths, top diameters, number and spacing of gains, treatment desired and destination.
International products assure the acme of satisfaction.
Write to our main office.
International Creosoting & Construction Co.
General Offices: Galveston, Texas
Plants: Texarkana, Texas; Beaumont, Texas; Galveston, Texas
The pole that lasts longest is least expensive

Apples!

TONY PEDRO, who keeps the fruit stand at the city market, has apples at 40c and 60c the dozen. One of the 60c apples weighs a half pound. It takes two of the 40c apples to weigh a half pound and the meat is not so good.

Yet Tony sells very few 60c apples. Folks buy the 40c apples because the others are too expensive!

Tony tells us that bananas will not sell at 50c the dozen if his competitor in the next stall has bananas one-third as large at 25c the dozen.

Too often, with too many thinking people, apples are apples and bananas are bananas.

Fortunately for him and for us, the Oil Man generally makes a business of buying. If 60c apples weigh twice as much as 40c apples and have a better flavor he buys the bargain and makes no mistake about which is which.

Where pumping conditions are affected by Sand, Shale, Lime, Salt Water, Gas or Extreme Temperatures, the Axelson Amco Pump (working barrel) frequently produces an uninterrupted and undiminished flow of oil for months or even years in wells which would have to be pulled at short intervals if ordinary working barrels were used.

The Amco Pump employs the principal of a ground and polished steel plunger working within a series of ground and polished cast iron liners. There are no cups.

As evidence that the gullibility of mankind on which the Italian fruit vendor prospers leaves off where the oil country begins, Axelson Amco Pumps are frequently delivered to our stores west of the Mississippi in carload lots. Where pumping conditions are trying they have almost entirely replaced the old fashioned working barrel in many fields.

The Oil Man knows his apples!

In Oil Field Equipment the most HUMAN organization in America

Frick-Reid Supply Co.

Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi — Stores Everywhere

Net	3,063,000	3,011,000	2,904,000
Lima-Indiana:			
Gross	1,097,000	1,137,000	931,000
Net	861,000	901,000	676,000
Illinois-S. W. Indiana:			
Gross	11,726,000	11,942,000	10,352,000
Net	11,290,000	11,494,000	9,852,000
Mid-Continent:			
Oklahoma, Kansas, Cent. and North Texas:			
Gross	171,905,000	175,355,000	148,410,000
Net	160,756,000	164,070,000	137,545,000
Northern Louisiana and Arkansas:			
Gross	29,770,000	30,483,000	15,897,000
Net	28,086,000	28,913,000	15,266,000
Gulf Coast:			
Gross	24,637,000	24,946,000	26,800,000
Net	24,227,000	24,598,000	25,071,000
Rocky Mountain:			
Gross	13,197,000	14,828,000	1,630,000
Net	13,187,000	14,819,000	1,620,000
Total pipe line and tank farm stocks east of California:			
Gross	261,968,000	268,446,000	213,255,000
Net	247,620,000	254,139,000	198,584,000
California (as stated above)	58,836,000	60,127,000	47,741,000
Imported crude petroleum held in the United States by importers elsewhere than at refineries:			
At Atlantic Coast stations	200,000	260,000	*.....
At Gulf Coast stations	552,000	830,000	*.....
Total	752,000	1,090,000	
Total domestic net pipe line and tank farm stocks east of California; producers'. pipe line and tank farm stocks in California, plus stocks of imported crude petroleum held in the United States by importers elsewhere than at refineries	307,208,000	315,356,000	*.....

*Not available.

DAYS' SUPPLY OF PIPE LINE AND TANK FARM STOCKS

(Based on monthly rate of deliveries of crude petroleum to consumers)

August, 1923, 148; September, 1923, 152; October, 1923, 155.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM—(Barrels)*

(From Bureau of Foreign and Domestic Commerce)

	September, 1923 Total	September, 1923 Daily Av.	October, 1923 Total	October, 1923 Daily Av.	Jan.-Oct., 1923	Jan.-Oct., 1922
Imports:						
From Mexico	6,022,000	200,733	6,681,000	215,516	65,062,000	111,965,000
From other coun.	.....	.....	217,000	7,000	2,429,000	748,000
Total	6,022,000	200,733	6,898,000	222,516	67,491,000	112,713,000
Exports:						
Domestic crude oil:						
To Canada	795,000	26,500	830,000	26,774	7,175,000	6,591,000
To other coun.	766,000	25,533	462,000	14,903	6,469,000	1,440,000
Foreign crude oil	31,000	1,033	†32,000	1,033	257,000	131,000
Total	1,592,000	53,066	1,324,000	42,710	13,901,000	8,162,000
Excess of imports over exports	4,430,000	147,667	5,574,000	179,806	53,590,000	104,551,000

*The Bureau of Foreign and Domestic Commerce has adopted a new classification which differentiates crude petroleum and topped oil; formerly, data for topped oil were included with those for crude oil and difficulty is still encountered in completely separating the two. †October data not available September daily average used.

CLASSIFICATION OF IMPORTS OF MEXICAN CRUDE PETROLEUM—(Reported to Geological Survey)

Percentage of Mexican imports, crude oil, lighter than 16°, September, 1923, 26; October, 1923, 21; Jan.-Oct., 1923, 30; Jan.-Oct., 123, 21; 16° and heavier, September, 1923, 74; October, 1923, 79; Jan.-Oct., 1923, 70; Jan.-Oct., 1922 29.

INDICATED DELIVERIES TO CONSUMERS OF DOMESTIC AND IMPORTED CRUDE PETROLEUM—(Barrels)

(Based on formula—indicated deliveries equal production plus imports minus exports plus stocks at beginning of month minus stocks at end of month)

	September, 1923 Total	September, 1923 Daily Av.	October, 1923 Total	October, 1923 Daily Av.	Jan.-Oct., 1923	Jan.-Oct., 1922
Dom. pet., by fields of origin:						
Appalachian	2,383,000	79,434	2,317,000	74,742	23,055,000	22,485,000
Lima-Indiana	190,000	6,333	178,000	5 742	1,817,000	2,242,000
Ill. & S. W. Ind.	541,000	18,033	593,000	19,129	6,648,000	6,342,000
Mid-Continent	22,445,000	748,167	26,755,000	863,064	239,626,000	207 780,000
Gulf Coast	2,325,000	77.500	2,164,000	69,806	27,124,000	23,370,000
Rocky Mountain	2,620 000	87,333	2,575,000	83,065	28,190,000	22,812,000
California	25,373,000	845,767	23,285,000	761,129	205,955,000	96,540,000
Deliv. and expts.	55,877,000	1,862,567	57,867,000	1,866,677	532.415,000	381,571,000
Exports of dom. crude oil	1,561,000	52,034	1,292,000	41,677	13,644,000	8,021,000
Deliveries	54,316 000	1,810,533	56,575,000	1,825,000	518,771,000	373,540,000
Imported pet.	6,130,000	204,333	6,528,000	210,581	67,962,000	107,674,000
Deliveries of domestic and imported petroleum	60,446,000	2,014,866	63,103,000	2,035,581	586 733,000	481,214,000

NUMBER OF PRODUCING OIL WELLS COMPLETED

Aug., 1923. 1,465; Sept., 1923, 1,278; Oct., 1923, 1,143; Jan.-Oct., 1923, 14,391; Jan.-Oct., 1922, 14,691.

*For States east of California, from The Oil & Gas Journal; for California, from the American Petroleum Institute.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES

(From the Panama Canal Record).

(Compiled from declaration by masters of vessels reported in tons of 2,240 pounds)

Crude oil, long tons, Sept., 1923, *840,360; Oct., 1923, 702,010; Jan.-Oct., †1923, 5,824,696; barrels (approx.), Sept., 1923, 6,135,000; Oct., 1923, 5,125,000; Jan.-Oct., 1923, 42,521,000; refined products, long tons, Sept., 1923, 27.000; Oct., 1923, 29,514; Jan.-Oct., 404,910.

*Revised. †In some of the manifests for the first few months of 1923, crude oil is not declared as such.

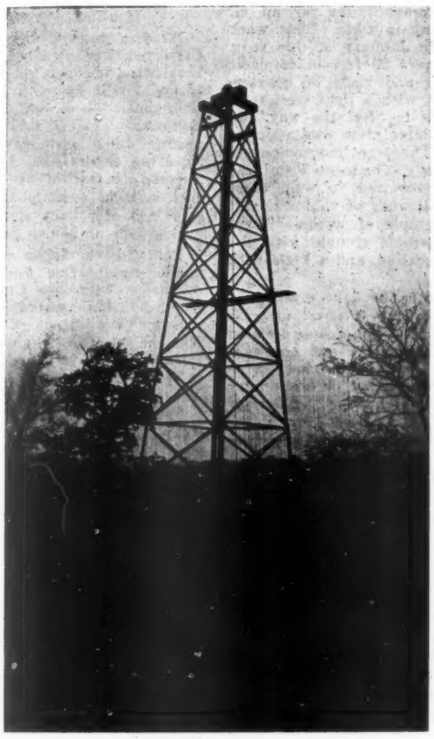
FARISH IN WARNING AGAINST CRUDE RAISE

W. S. Farish, president of the Humble Oil & Refining Co., says: "The danger is that somebody, in the interests of improving inventory and presenting a favorable year-end balance sheet, may mark up the price of crude. That would be a grave error. It would set the wildcatters loose again in areas where we know there is oil, and production would swamp us again. Even with the present falling off in production, the country is producing from 8,000,000 to 9,000,000 bbls. a month more than it consumes, for consumption in these cold months is falling off as rapidly as production. In my opinion, the price of crude oil should, in the interest of the industry, remain low until the next heavy consuming periods, say May of next year. If the wildcatters are held in leash by the present unprofitable price of oil, then by May consumption may have eaten into stocks so that we may be able to dispose of perhaps 125,000,000 bbls. at $2. The oil industry is sick. An advance in crude at the present time will make it sicker."

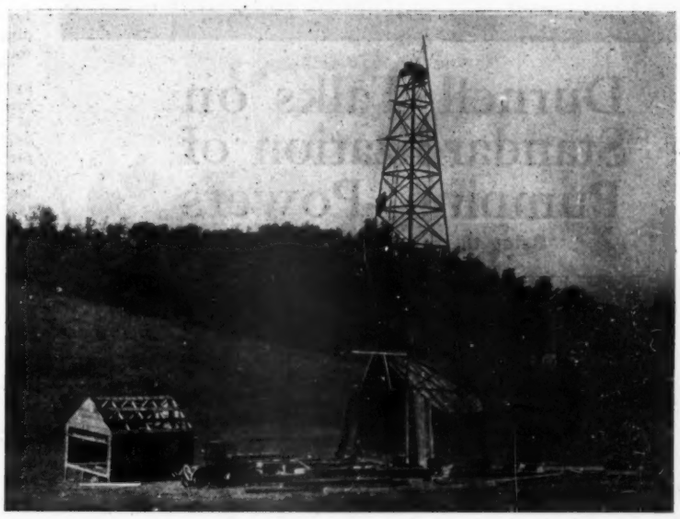
DENIES BUYING INVINCIBLE OIL

TORONTO, Ont., Dec. 3.—C. O. Stillman, president of the Imperial Oil Co. of Canada, denied the report in New York that his company had obtained control of the Invincible Oil Co. Mr. Stillman said there was no connection between the companies.

Structural Steel Derricks and Drilling Rigs



Thirteen Years Service



Just Building a New One

The Gas Company, that is building this Derrick, has already over four hundred of them and the first one of them purchased nearly fifteen years ago, is still drilling Gas Wells.

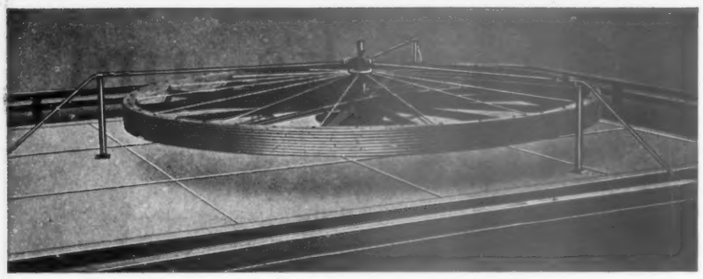
The Derrick shown on the left, was purchased from the "YORKE DERRICK COMPANY in 1910, and during a great part of the thirteen years it has been in use, it has been used for pulling casing from old, or abandoned wells. The derrick is still in good condition. It is owned by The Preston Oil Company, who have a large number of these derricks in use on their leases, in Washington County, Pa.

C. W. Patterson
Supt.

Mr. Patterson, the Superintendent, whose signature appears on the left, supervised the work of this derrick for thirteen years. He should know what a "REAL STRUCTURAL STEEL DERRICK" is after using one individual derrick for thirteen years and submitting it to the severest tests during these years; such as pulling pipe that was stuck in cave rock for over thirty years. We can furnish hundreds of testimonials just like this one, telling of the

Yorke

Yorke Derrick Company, Washington, Pa.
The Ohio Structural Steel Company, Newton Falls, Ohio



Durnell Talks on Standardization of Pumping Powers

Being the second of a series

H. G. Durnell

The Durnell Underpull Pumping Power is the embodiment of Standardization in Oil Field Equipment. This is true for two reasons, which are:

First: All of the parts, such as different sized eccentrics and bandwheel or bearings, are interchangeable on all size powers.

Second: The lubrication of the plant is of the simplest and most efficient design; lower bearings in a bath of oil; top bearing sight feed oil cup; positive bath of oil in each eccentric.

The deep production that has developed in the last few years has necessitated a longer stroke to handle increased capacity. This demanded larger parts, particularly eccentrics and bandwheels and such changes can be readily made with the Durnell Power by simply removing the smaller units and replacing with larger. This eliminates the possibility of buying a new power to do the new and heavier work.

Standardization of parts and lubrication insure efficiency and economy, features that are found in all Durnell Underpull Powers.

INTERNATIONAL SUPPLY COMPANY

EXCLUSIVE AGENTS. STOCKED AT

OKLAHOMA		KANSAS	WYOMING
Okemah	Jennings	El Dorado	Casper
Bristow	Shidler	Virgil	
Okmulgee	Tonkawa	Madison	
Bryant	Bartlesville		
Wewoka	Pawhuska		MONTANA
	Drumright		Sunburst

MANUFACTURED BY

UNION MACHINE COMPANY

BARTLESVILLE, OKLA.

2

APPLICATION OF OXY-ACETYLENE WELDING SHOWN FROM WORK DONE

By G. O. Carter

Consulting Engineer, the Linde Air Products Co.

Paper delivered before the International Acetylene Association, Chicago, Ill.

During the past year the various subsidiaries of the Union Carbide and Carbon Corp. have been doing some interesting work to advance the application of oxy-actylene welding. Oxweld Acetylene Co. started the work with the cooperation of The Linde Air Products Co.'s service department, welded two 1,000-bbl. oil storage tanks for an oil pipe line company in Ohio. This work was completed in January of this year.

These tanks were 20 feet in diameter by 18 feet high and made of quarter-inch steel plates, with a light steel roof. It was necessary to "feel the way," so only a small welding crew was assigned for the work. The pipe line company's engineers properly commented on the length of time required to weld these tanks, as riveted tanks of that size can be built in a couple of weeks. There was also considerable trouble with the bottom plates buckling, and a little with the side sheets.

The completed tanks have given good service for almost a year now and will, of course, be watched for a long time to determine their durability and non-leakage qualities. Several things were learned from this job which were later incorporated into plans for somewhat similar work: that of building a gas holder for either an oxygen or acetylene plant.

Completing Gas Holder

During the summer it was decided to weld a 50,000 cubic feet gas holder to be built at Tulsa, but difficulty was experienced in arranging for the steel to be prepared in a manner considered necessary for oxy-acetylene welding. So the welding of a holder was held in abeyance and then allotted to the Linde plant at Columbus, Ohio. This holder is just being completed.

The magnitude of this undertaking is indicated by the fact that the water tank, being 53¼ feet in diameter by 26½ feet high, has a storage capacity over 10 times that of each of the Uniontown oil tanks. Were the Columbus tank filled with oil, it would hold 10,750 bbls.

Speed of construction was, of course, a matter of utmost importance, so as large a crew as seemed capable of steady work was selected from the Linde sales service operators, a supervisor and seven welders being assigned. Arrangements were also made to employ local welders as fast as qualified men could be found. There were plenty of applications for the work but only two welders qualified out of 25 or 26 who were tested. This difficulty did not seem to be due to the pay offered, although a couple of the applicants felt that the rate was too low.

This association should certainly be keenly interested in these experiences with personnel because the ability to find qualified welders is of prime importance to a contractor undertaking to do a large welding job. In the Columbus district the natural gas pipe line companies have experienced the same difficulty we did.

Qualified Welders Needed

Welders were finally located—one at Cleveland, one at Elyria, two at Pittsburgh, and one was generously loaned to us by The Logan Natural Gas Co. of Columbus. These men, added to the two Columbus welders and a part of the original Linde crew, gave us 10 men besides the supervisor. Unfortunately for a complete test of our ability to keep such a gang steadily at work, the full crew was only built up in time for work on the bell or holder part.

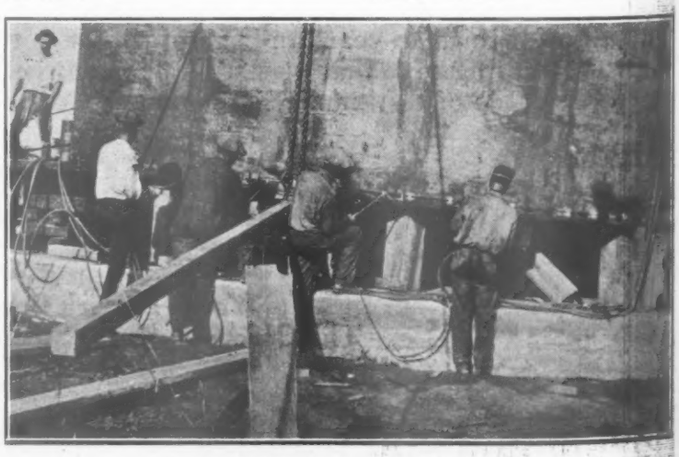
Plans for the holder were made by the Linde Engineering Department in cooperation with the Cruse-Kemper Co., which had built several riveted gas holders for the Linde Co. The Cruse-Kemper Co. also assigned a very capable foreman to aid in the work and to follow it up for the benefit of his own company. Mr. Kersey's experience in building gas holders was invaluable in setting up the blocking for the bottom, in handling the steel plates, lowering the bottom and first ring after the test, attaching the "walk around," standards, guide rails, etc.

The design of the gas holder was based on a few major principles: Plates should be cut at the rolling mill as nearly as possible to exact size so as to fit together for butt welding. Steel was to be as nearly standard as possible to prove that special difficulties need not be anticipated in procuring materials. Quality was Grade A Open Hearth. Sizes were readily obtained from Ryerson Co. Shearing tolerances were quite satisfactory insofar as our specifications called for plus or minus ⅛-inch or either length or width, but all meeting edges to be perpendicular.

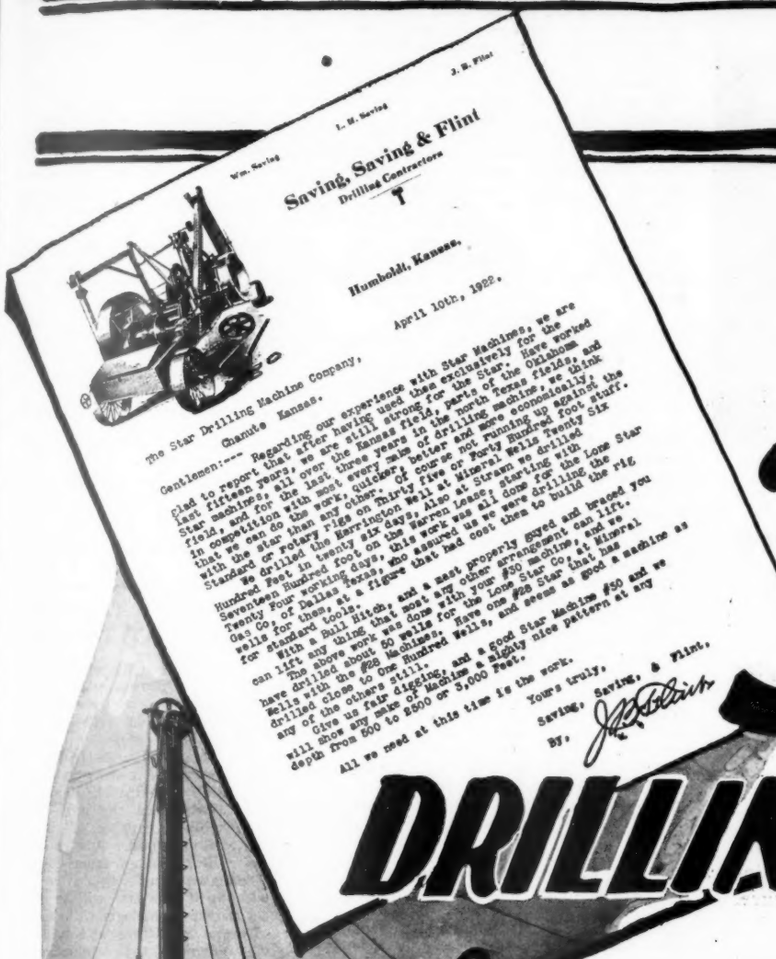
Method of Construction

The method of construction was also intended to follow some important principles; namely, the bottom plates would be tacked together; an angle curb would be tacked to the circumference of the bottom plates; the first course would be completely welded to the curb and the plates welded end to end to establish a complete ring 4½ feet high and ¼-inch thick. Then the bottom was to be welded so as to lock up stresses into the first ring and in that way overcome buckling which occurs with welding unrestricted plates.

The principle to be followed when erecting side plates was that all seams



Tacking the first row of sheets to the curb


Saving, Saving & Flint
Drilling Contractors

Humboldt, Kansas,

April 10th, 1922.

The Star Drilling Machine Company,
Chanute Kansas.

Gentlemen:—

Regarding our experience with Star Machines, we are glad to report that after having used them exclusively for the last fifteen years, we are still strong for the Star. Have worked Star machines all over the Kansas field, parts of the Oklahoma field, and for the last three years in the north Texas fields, in competition with most every make of drilling machine, and that we can do more and better work with the Star than any other. Of course we think the star is better than any other, but we are economically Standard or rotary rigs on thirty five or forty Hundred foot stuff.

We drilled the rigs on the Harrington Well at Mineral Seventeen Hundred feet in twenty six days. Also at Mineral Twenty Four working days, this Warren lease all starting with Twenty Six Gas Co, or Dallas Texas, who assured us we were drilling the wells for them, at a figure that had cost them to build the rig for standard tools.

With a Bull Hitch, and a mast properly guyed and braced you can lift any thing, the most any other arrangement can lift. The above work was done with your #50 machine, and we have drilled about 50 wells for the Long Star Co, at Mineral Wells with the #26 machine. Have one Long Star that has drilled close to One Hundred Wells, and seem as good a machine as any of the others still.

Give us fair digging, and a good Star Machine #50 and we will show any make of Machine a slightly nice pattern at any depth from 600 to 2500 or 3,000 Feet.

All we need at this time is the work.

Yours truly,
Saving, Saving & Flint,
By, J. B. Flint

The "Star" DRILLING-MACHINE

FIELD PERFORMANCE—NOT CLAIMS—Is what counts in a Drilling Machine.

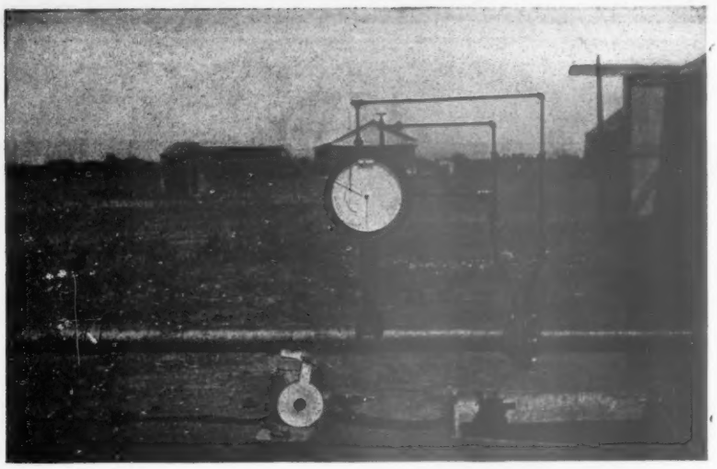
Every man whose duty it is to decide upon the type of Drilling Rig to buy must be guided either by his own experience or that of others in whom he has confidence.

Monthly, there will appear on this page a different letter from representative producers and contractors.

Profit by their experience: USE A STAR

The Star Drilling Machine Company,
Akron, Ohio

Branches: Chanute, Kan., Portland, Ore., Long Beach, Calif.
Export Office: 2 Rector St., New York, U. S. A.



Why Foxboro Orifice Meters Are Trouble-Proof

Reason No. 1— The Foxboro patented flange connections give the greatest differential pressure for a given size orifice. The flange is shipped completely drilled and tapped. It is impossible to set up meter connections incorrectly.

Reason No. 2— The differential chambers are of all-steel construction. No castings are used. Every instrument is tested under 500 pounds pressure.

Reason No. 3— The Foxboro patent check valves positively prevent mercury from being blown through the gauge, blowing of drips or running the gauge over its capacity. They are always immersed in mercury, completely protected from rust or dirt.

Reason No. 4— The Foxboro Orifice Meter is built complete by Foxboro craftsmen. It is not assembled.

These are the reasons why thousands of Foxboro Orifice Meters are giving dependable service in the measurement of gas, air, oil, steam and water throughout every oil and gas field in the United States and Canada.

Let us send you Foxboro Orifice Meter Bulletin O-113-1.
You'll find it interesting and valuable.

THE FOXBORO CO., Inc.
Neponset Ave., Foxboro, Mass., U. S. A.
213 South Cincinnati Ave., Tulsa, Okla.

New York Chicago Boston Philadelphia Pittsburgh Cleveland
Rochester Birmingham Los Angeles San Francisco Portland, Ore.

FOXBORO
Reg. U. S. Pat. Off.
THE COMPASS OF INDUSTRY
6128

were to be made with plates opened at the unwelded end so that there would be an outlet for stresses. It was soon found, however, that it would be difficult to keep a big crew of welders busy if horizontal seams were so welded, since only one man could weld on one seam at a time. There was, therefore, an important modification in principle necessary to make the welding practice conform to economic requirements. Incidentally the method developed gave excellent results and it is to be recommended for the next work of like nature.

The method of handling vertical seams is to follow the original principle just mentioned and has given excellent results.

Bottom Plate Boxes

The concrete foundation was completed and the bottom plates were laid upon boxes. These were of a type in common use by the Cruse-Kemper Co. and were 28 inches in height. This height allows reasonable freedom of movement for men working under the tank bottom. The "key-plates" were first set in place upon the boxes and tacked. After the plates were tacked, the boxes were moved with the exception of those under the "key-plates," which were not disturbed until destroyed. After the boxes were moved, "pig boards" 28 inches high were placed under the sheets, from 8 to 10 being required for each plate.

"Pig boards" are made by nailing a piece of 1 to 10-inch plank to the edge of a similar piece so that the long sides are perpendicular (like an angle iron). This shape of blocking braces against sidewise pressure tending to upset the blocking, and the method of nailing the pieces permits easy destruction of the "pig boards" when the bracing is to be removed and the bottom lowered.

After the bottom plates were tacked in place the circumference was checked by means of a home-made scribe. A little trimming with a cutting torch was needed and then the angle iron curb was checked for curvature and tacked in place. When the bottom and the curb was completely tacked, there was some buckling or unevenness, but this was not as pronounced as it was after the bottom was completely welded. The maximum variation then was plus or minus 5 inches. This sounds like a good deal, but we may feel better to know that a tank bottom recently welded with the electric arc was plus or minus 8 inches. Furthermore, we believe that the next oxy-acetylene welded bottom will be much nearer flat than the one at Columbus.

The first row of side sheets and a good many higher ones were hoisted into position with "A" frames. One end of the seam was left open to allow for contraction of the weld, but only one welder could work at a time upon such a seam.

Better With Large Crew

The plates were lined up by means of clamps made by slotting a 3 to 5-inch piece of ¼-inch plate set in the seam and secured by a plate and wedge on each side. At first the vertical seams were lined up by a special clamp, but it was later decided not to clamp the vertical seams while working on the horizontal ones.

The preliminary method of tacking with a small crew of men did not give good results, as the plate pulled or distorted as the tacking progressed. Better results were obtained when a larger crew of men made the tacks in the seam simultaneously and this method was adopted as a standard practice for the upper four rows of the tank.

After the first ring of plates and the bottom was completely welded, the "pig boards" and boxes were knocked apart and the bottom allowed to sag down upon the foundation. A layer of sand and cement covered the foundation under the bottom. While the tank was being lowered in this manner, considerable twisting occurred, but it did not in any way damage the welds. Just before lowering the tank in this manner it was tested with 12 inches of water which showed up one slight leak and about ten sweat spots.

An unique method was used for making a rather refractory vertical seam open up to have the correct space of 1½ inches at the top of the 4½-foot seam. After this procedure the weld was completed and it was straight and true.

No great difficulties were encountered in rounding out the tank shell and setting the "walk around," which is riveted in place at the top, but has the standards and guard rails tacked to the side of the tank.

The bottom angle of the bell was bolted to the lower edge of the first course of plates. The bell was built by welding at the level of the "walk around" and was lowered by 12 lowering screws, as each row of plates was completed. This welding procedure permitted the welders to keep steadily at work while the guide rails inside the tank and the bottom rollers of the bell were being attached and adjusted.

At present the welding has been practically completed and the tank is under final test. A great deal has been learned about satisfactory preparation of materials and suitable methods of procedure which should aid materially in the future construction of similar holders and larger tanks.

DIAMOND CORE TEST TO BE MADE AT TONKAWA

The diamond core drill, which is used extensively in the proven areas of California and Mexico, is to receive a test in the Tonkawa Field. The Sullivan Machinery Co. has closed a contract with the Comar Oil Co. to drill a well near the center of the southwest quarter of Section 2, Township 24, Range 1w, in Noble County, and the large "FK" type of machine, capable of drilling 5,000 feet, will be used. A core of the formation will be taken from 400 feet to the Tonkawa sand.

The results of this test will be of the greatest interest to geologists, the United States Bureau of Mines and to all of those who advocate the development of scientific methods in the recovery of oil. The use of the diamond core drill will give a correct log of the formations as the machine brings to the surface a continuous core, thus showing the exact thickness of the oil sand and its porosity, and enabling the scientists of the Bureau of Mines who are specializing in the work to make accurate estimates of valuation.

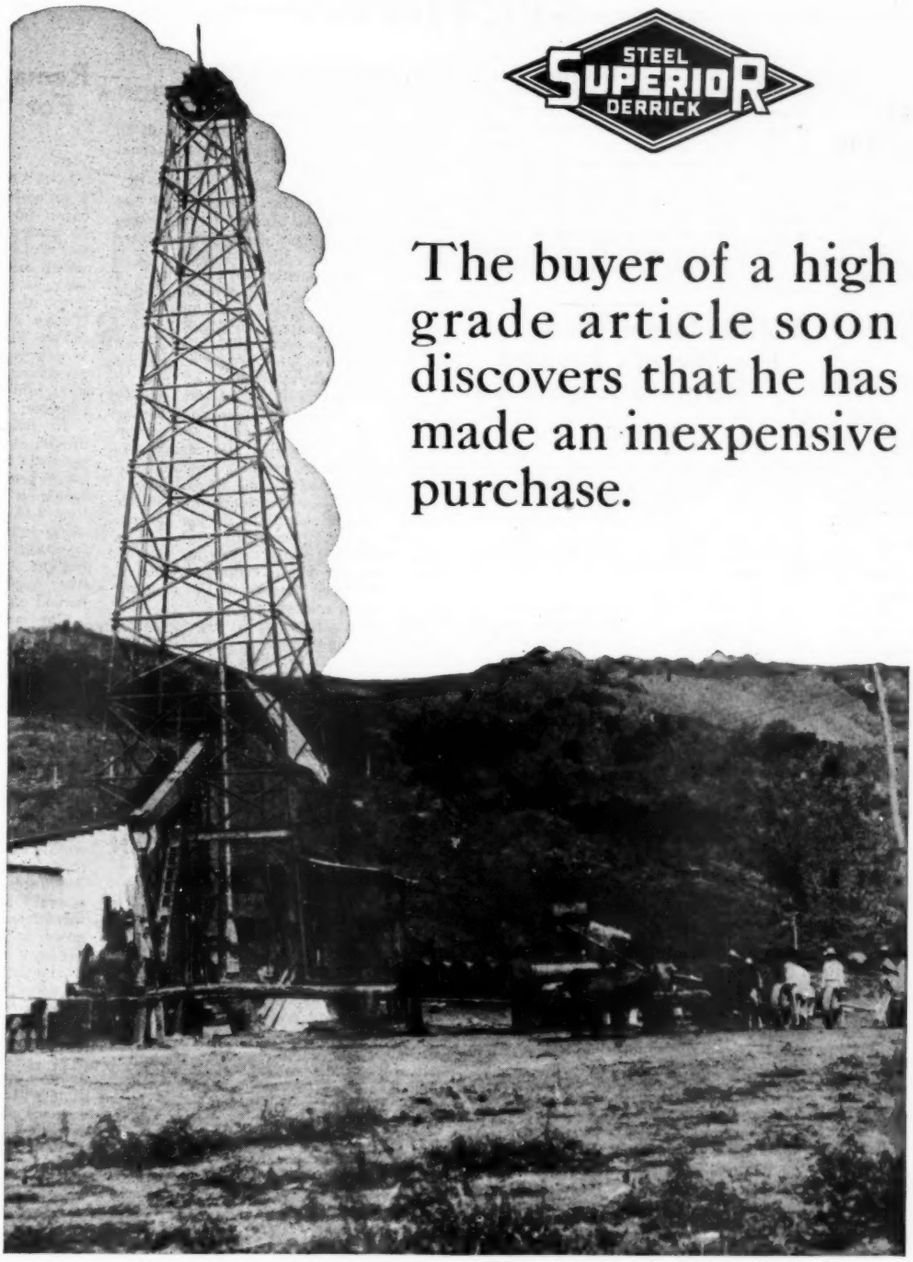
SAFETY CONFERENCE FOR MID-CONTINENT

For the purpose of discussing safety measures in oil fields, a meeting of oil field, refinery and pipe line labor employers has been called by the Mid-Continent Oil & Gas Association which will be held at the association rooms at Tulsa at 2 p. m., December 6. A joint committee of the Petroleum Safety Council and of the Texas division will be in charge, including Roy B. Jones of the Panhandle Refining Co.; W. B. Hamilton, of the Texhoma Oil & Refining Co.; R. S. Hazeltine, of the Guiberson Corp.; James A. Carrol, of the Prairie Oil & Gas Co., and J. S. Gibson, of the Prairie Pipe Line Co.

Delegates are expected at the meeting from Texas, Louisiana, Arkansas, Kansas and Oklahoma, and a specific proposition will be made by the committee to the Mid-Continent Association to sponsor and superintend the work. It will perform as a central agency in the Mid-Continent Field to carry on safety work systematically and efficiently.

MOVING STORE TO WEWOKA

The Continental Supply Co. is moving its store from Slick, Okla., to Wewoka. The supplies are already on the way and the foundation has been completed at Wewoka. Work of tearing down the building at Slick has also been started.



STEEL SUPERIOR DERRICK

The buyer of a high grade article soon discovers that he has made an inexpensive purchase.

One of the 84-foot Standard Superior Steel Drilling Derricks now in use by the Beacon Sun Company in the Valera District of Venezuela.

Ask the driller who has used one

SUPERIOR TUBE COMPANY

STEEL DERRICKS CASING TUBING LINE PIPE

KANSAS CITY, MO.

PITTSBURGH TULSA DALLAS CASPER ST. LOUIS

REFINING AND MARKETING SECTION

World's Refineries Now Number 800; United States 600

There are approximately 600 refineries in the United States with a capacity of approximately 3,000,000 bbls. daily, according to an estimate by H. G. James, former secretary of the Western Petroleum Refiners' Association. Writing in the Derby Spirit, a publication of the Derby Oil & Refining Co., Mr. James discusses the refinery capacity of all the important oil centers. He says in part:

Refineries outside of the United States number nearly 200, with daily capacity not far below 1,000,000 bbls. Of course, motor car use in foreign countries is on the increase, but if foreign gasoline refining capacity in other countries is built ahead and in expectation of consumption, as it has been in the United States, United States refiners can draw little comfort from figures on increase of forern motor car shipments.

The United States has its 25,000, its 50,000, and even its 60,000-bbl.-a-day oil refineries. None in this country, however, is greater than that of the Anglo-Persian interests in Persia, credited with 70,000-bbls.-a-day capacity. England has at least one plant with a daily refining capacity of more than 50,000 bbls. a day. Southern Indian can boast a plant nearly as large. Great progress has been made in the refining industry in Russia, Japan, British Isles, Poland, Mexico, India, Borneo, Persia, Egypt and other countries.

Mexico Leads

Information compiled, for the most part, from reports direct from the various countries concerned shows that Mexicon heads the list of foreign countries in the matter of total refining capacity, with a quarter of a million barrels a day. This capacity was built up in the main, to care for the great heavy oil production which that country was producing two and three years ago.

Next in size of capacity comes Russia, with nearly 150,000 bbls. a day. Forty-five refineries, mostly comparatively small, make up this capacity. The refining industry in England is restricted to a few plants, five refineries having combined capacity of 80,000 bbls.

Other Countries

India shows up with 12 refineries, total capacity above 65,000 bbls. a day. Poland has 15 refineries with some 65,000 bbls. turnout. Persian capacity from two plants is reported at 70,000, mainly from one plant. Canada has 15 plants, stretching from east to west, for the most part highly efficient and modern plants, total capacities above 60,000 bbls. Borneo claims three plants, capable of using 45,000 bbls. a day.

Spain has one large refinery, capacity 25,000 bbls. On the Island of Sumatra is one Royal Dutch plant of 15,000 bbls. a day size, there being two other small ones on the island. In Egypt are two refineries, one belonging to the Government, comparatively small. Peru has two good plants. There are refineries in Java, Italy, Germany, Japan, Trinidad, Hungary, Argentina, Venezuela, Colombia, Ecuador, Korea, Denmark, Norway, Australia, Mesopotamia, Rumania, Austria and Cuba.

PROCESS REMOVES SLUDGE

HOUSTON, Tex., Dec. 3. — Cleaning sludge from the fuel oil compartments of tankers and oil-burning steamers by a vacuum process known as the Wheeler system, is now in use at Galveston and other Gulf ports. The sludge can be removed from the oil tanks within a few days, whereas it was shoveled out heretofore. The apparatus is on barges, which are placed along side of the vessels. The sludge is then taken to Pelican Spit, an island in the harbor, and worked over and a part of the fuel oil saved. The sediment is burned. The process has been employed on a number of tankers and oil-burning steamers making Galveston.

Toledo Hears Plan For World's Largest Refining Expansion

By Whit

TOLEDO, Ohio, Dec. 3. — Toledo, already one of the largest refining centers of the country, having outdistanced Cleveland, is still making increases in the capacity of some and new ones are to be constructed. Located at Toledo is the Standard Oil Co. of Ohio, the Paragon Refining Co., Craig Oil Co., Sun Oil Co. and several smaller plants.

It has developed that the Standard Oil Co. is planning the expenditure of another $5,000,000 on its big refinery on the east side of the Maumee, just below Ironville, a Toledo suburb. Officials of the Standard were reported in the city and a survey to determine expansion which, it is understood, will make this plant the largest in the world, is under way. Since this big plant was built there has been almost continuous expansion. One big program is just nearing completion, but the demands upon the plant are such that the expenditure of an additional $5,000,000 is deemed necessary. This company owns in fee simple close to 1,000 acres of valuable land along the east shore of Maumee Bay, with a water front of more than one-half mile.

Announcement was made by A. A. Hickok that the Hickok Producing Co. has purchased from J. H. Bellows 30 acres of ground adjoining its present plant on the Richards road, just off Bancroft Street. Plans are now being prepared by a Columbus firm for a new refinery for the Hickok Co. on the new ground that will represent an investment of $500,000 and will give Toledo another modern refinery of large capacity. The present plant is on a 10-acre site adjoining the property just acquired. The company now has 68 filling stations in Toledo and vicinity. Actual construction work on the plant will start in spring.

Work on the refinery of the Great Lakes Refining Co., adjoining the big plant of the Paragon Refining Co., on Front Street, and between that street and the Maumee River, is being pushed ahead at a rapid rate.

CURB PUMPS REMAIN

BUFFALO, N. Y., Nov. 30.—There is no change in the legal status of curb pumps. Technically they have been declared illegal by the highest court of the State, but actually nothing seems to be done about having them removed. No localities except Buffalo seem to have taken any particular stand in the matter, and in fact no definite action has been taken here. Sooner or later they may be forced out and it is evident that the farsighted business men are provided against that contingency by building "drive-in" stations. The Pennzoil Co., the Crown Oil Co. and various other prominent New York State companies are taking quite decisive steps along this line.

OIL NOW USED FOR RADIATOR SOLUTION

A new use has been found for oil in connection with the operation of internal combustion engines. Crude petroleum at present furnishes the power and the lubrication, but indications point to the fact that it can also be utilized for a cooling medium, particularly during the winter months.

Recent experiments have resulted in the perfection of a non-freezing liquid for use in automobile radiators. The liquid is manufactured by the Lincoln Refining Co., Robinson, Ill. It is known as Artik Spirits, and is distributed by the James B. Berry's Sons Co.

Users declare that it displaces entirely water or a water-alcohol mixture during cold weather. Some say it is advantageous in good weather also, many cars having utilized it recently around Chicago. It is said to do away with a great deal of misery attendant upon the use of alcohol solutions during winter. It does not boil on fair days like a water-alcohol mixture, reducing the alcohol content to a freezing solution, which afterward freezes in the radiator during severe cold snaps.

It does not freeze at 50 degrees below zero when undiluted. This factor is sufficient for all ordinary winter protection to radiators. The liquid has a reddish-orange color, little or no odor, and has practically the same gravity as kerosene. It is considered as a careful cut of a crude oil, combined with other materials by means of a trade process, which gives it its desirable properties.

BALTIMORE PURCHASE SHOWS MEXICAN PLAN

CHICAGO, Ill., Dec. 3.—Local refining and marketing circles see in the recent purchase of the American Oil Co. of Baltimore, Md., by the Mexican Petroleum Corp. further evidence of the determination on the part of the latter company to enter the jobbing end of the oil business on a large scale.

Arrangements are being made by this company for shipping by waterway, utilizing the Mississippi and Ohio Rivers, to bulk stations at St. Louis and Pittsburgh, and the new bulk plant at Memphis, from the company's topping plant near New Orleans. Two tanks of 37,500 barrels capacity each are to be erected at Pittsburgh for storage of gasoline to be marketed in western Pennsylvania and Ohio, Chicago men assert.

Other companies are redoubling their efforts to increase their business in the Chicago district with the prospects good for lively competition.

ATLANTIC'S PURCHASE OF SINCLAIR CRUDE

The Atlantic Refining Co. has purchased 7,000,000 bbls. of crude oil from the Sinclair Crude Oil Purchasing Co. for delivery over 1924 and 1925. This deal, which was closed several weeks ago, provides for the delivery of approximately 10,000 bbls. of crude monthly over the tw-year period.

The crude will probably come from the Texas fields being delivered to Houston, Texas, through the Sinclair lines, and will be used at the Philadelphia plant of the purchasing company. It is understood that the shipments will come from the current purchases of the Sinclair company enabling it to increase its runs from producers in the Mid-Continent area.

Remarkable Claims For New Los Angeles Distilling Process

LOS ANGELES, Calif., Dec. 1.—Using a process which, it is asserted, will recover far more gasoline from a barrel of crude than any other refining method, the Crystal Petroleum Products Corp., which was established here early in the year, is gaining considerable momentum with its refinery, which is located on Cherry Avenue at Hynes, 3 miles north of the Signal Hill oil field. The plant is now running at a capacity closely approaching 2,000 barrels of crude oil per day, although it was only designed to consume 1,500 barrels a day.

In principle at least this plant is unique among refineries. It is claimed it converts crude oil into its respective finished products without resorting to agitation or filtration. According to William Landis, inventor of the process, the oil is refined by low heat vapor distillation, and the lubricating oil is made during the same operation with which gasoline, naphtha and other products are turned out.

One may stand in front of a battery of "look boxes" at the refinery and gaze into a dozen glass receiving boxes as "tops," gasoline, distillate, lubricating oil, transmission oil and half a dozen other finished products pour out, and one of the impressive things about the process is that the "tops," instead of coming through red or pink, come through almost white, at the end of the first "cut."

E. J. Abbott, president of the corporation, says the refinery operates unlike the average refining plant, in that it works at low heat, the usual temperatures of the stills running about 450 to 500 degrees—sometimes a trifle higher—whereas the old-style refinery works upward from 500 to 800, and even 1,300 degrees or better, and under tremendous pressure.

The Crystal refinery distills, from start to finish, according to Mr. Landis. It uses no cracking process and does not burn out its stills in a few days, because it does not operate with such intense heat. Moreover, he asserts, a batch of crude dumped into the still at any given time will emerge divided into at least 10 finished petroleum products ready for the consumer in a few hours, while the old refining process requires from 24 to 48 hours to convert crude into finished, mechantable products.

IOWA OIL MEN TO MEET

A general meeting of the Iowa Independent Oil Men's Association will be held December 13 at the Savery Hotel, Des Moines, Iowa. There will be a morning session at 10 a. m., followed by a luncheon given through the courtesy of the Des Moines jobbers and an afternoon session at 2 p. m.

Fred White, chief engineer of the Iowa State Highway Commission, will address the meeting on the topic of "A Good Roads Program for Iowa." An invitation has been extended to Ben J. Gibson, State Attorney-General, to deliver an address, taking as the theme, "Iowa Anti-discrimination Laws."

ILLINOIS MARKETERS TO MEET

The annual meeting and election of officers of the Illinois Petroleum Marketers Association will be held at the Gold Room, Jefferson Hotel, Peoria, December 11. L. V. Nicholas, President National Petroleum Marketers Association, will address the meeting.

You assume no risk in installing the Dubbs Process nor do we, for we know what it is and what it does and that is why we so broadly and freely guarantee it

We guarantee

(1) Correct performance

(2) Yield

(3) *We guarantee unqualifiedly complete protection under our patents against the world*

Universal Oil Products Company
Owners of the Dubbs Process
208 South La Salle Street Chicago

Governments Tests With Floating Roof

Evaporation Reduced by Eliminating Vapor Space Above Oil While Fire Hazard Greatly Lessened. Arrangements Described

By Ludwig Schmidt
Assistant Petroleum Engineer, Bureau of Mines

The petroleum industry has recently shown such great interest in the evaporation of crude oil and of gasoline, and in the prevention of evaporation losses that almost daily there is being developed and placed on the market equipment designed especially to reduce these losses. Among the recent developments is a new type of tank roof known as the "floating roof," which practically eliminates the vapor space over the surface of the oil, thus removing one of the chief causes of evaporation.

There are at the present writting at least two types of floating roofs, which, while similar in fundamental principle, differ mainly in the method of making contact with the inside shell of the tank. One type of floating roof is known as a floating tank deck, and has on its circumference flexible metal baskets containing gravel that rest against the inside shell of the tank. In the other type of floating roof contact with the tank shell is made by the use of movable buffers or shoes. These are attached to the outer ring of the roof and are pressed against the tank shell by means of springs.

The Bureau of Mines, in continuing its work on the prevention of evaporation of crude oil and gasoline, has recently completed tests on tanks equipped with the type of floating roof that makes use of movable buffers or shoes.

Although the bureau is concerned mainly with the results of the tests, it is deemed advisable to give, in considerable detail, the design and operation of this particular type of floating roof. This report includes the results of evaporation tests made on "working" tanks at the Shaffer Refinery, Cushing, Okla., and results of a fire test made at the plant of the Chicago Bridge and Iron Works, Chicago, Ill.

Losses From Working Tanks

In some stages of handling petroleum and its products losses by evaporation while filling tanks are a considerable percentage of the total evaporation loss. To illustrate, an evaporation survey made over a section of a trunk pipe line showed that the losses due to filling and emptying the tanks at the "measuring" stations were about 80 per cent of the total evaporation losses over the section of the line tested. These filling losses are due to the expulsion of air, saturated with gasoline vapors from the tanks being filled with oil. Breathing losses due to the flow of air into and out of a tank caused by the constant variation of atmospheric conditions, are next in importance to filling losses. Many methods are used to reduce these losses such as vapor tight tankage, water seal tops, spray systems and insulation. However, probably one of the most effective methods is to reduce the vapor space over the surface of the liquid.

The "floating roof" described in this report is designed to float on the oil. Theoretically it should, through the elimination of the vapor space over the oil, prove effective in reducing evaporation losses.

The Floating Roof

The floating roof consists primarily of a tub about 17½ inches deep, and of a diameter a few inches less than that of the tank, which floats on the oil. To the sides of this tub is attached a series of buffers or shoes which make contact with the inside shell of the tank and allow the roof to move up and down as the oil level changes while maintaining a fairly tight seal. Such construction when properly designed and installed should eliminate practically all vapor space above the oil and prevent exposure of the liquid to the atmosphere. The shoes are about 4 feet long and are connected to each other with strips of heavy gas tight canvas and wire inserted asbestos, so as to allow for any expansion or contraction when the roof passes rivets, seams or other irregularities in the shell of the tank. The horizontal plates supporting the shoe rest on rollers placed in a trough which is riveted to the upper edge of rim of the tub. These rollers allow a free horizontal movement of the shoes when passing over seams and rivets. Pieces of 2½-inch pipe about 10 inches long, were used for rollers. The trough is filled with oil forming a liquid seal which prevents the vapors in the space over the oil between the shoe and the tub from passing out into the atmosphere. This space, in which vapors are confined, amounts to only 180 feet in a 55,000-bbl. tank. The shoe is kept against the shell of the tank by means of a plunger and spring. The spring is encased in a nipple attached to the side of the tub. Any gases or air which accompany the oil in filling the tank are allowed to escape through a small vent pipe, attached to the tub.

Arrangement of Shoes

The tub is divided into several compartments of balanced area, by strips of 3/16-inch steel plate, eight to ten inches high, welded in a vertical position. These compartments prevent rain water from collecting on one side of the roof and capsizing it. Means also are provided whereby the water may be drained by an automatic siphon from each compartment into the bottom of the tank where it may be drawn off periodically.

In a cylindrical tank the shoes should rest flush against the shell of the tank except when passing over the rivets or seams where a section of the shoe will stand away from the tank shell the depth of the rivet head or the thickness of the plate. This results in an exposure which is a very small portion of the total area of the tank. However, to reduce evaporation due to this exposure of the liquid the shoes are made about 23 inches high and as a result the vapors must pass through a narrow slit, the outlet of which is about 18 inches above the surface of the liquid. Assuming that on an average a ¼-inch opening exists between the shell of the tank and the shoes, the evaporation due to this exposure would be very small. A tank 30 feet in diameter, equipped with a floating roof and with a ¼-inch opening, would have an exposure of two square feet of oil surface. Actual tests show that a 250-bbl. lease tank (approximately 170 square feet of exposed surface) containing crude oil of 39.8° A.P.I. gravity, while standing five days lost 9.2 bbls. or .054 bbls. per square foot of surface. On this basis of exposed areas, the theoretical loss due to exposed oil in a tank 30 feet in diameter, in five days would be only .108 barrels (4.5 gallons). Up to the present time a long time standing test on a floating roof of this type has not been possible, as the roofs installed are on working tanks. Consequently a laboratory test was made to determine as nearly as possible the loss which would occur from the exposed oil between the shoe and the side of the tank.

Laboratory Evaporation Test

The apparatus used was a sheet metal container 30 inches long and 24 inches deep, divided by vertical longitudinal partitions into compartments of ⅛, ¼, ½ and 1½ inches in width respectively. Each compartment was filled to a depth of six inches with gasoline of 57.7° A.P.I. gravity. The depth of the gasoline was measured daily for 20 days and an evaporation curve made for each compartment. These curves showed that after the sixth day the rate of evaporation decreased materially, therefore, the total evaporation loss for the first six days shown in Table 1 was used in computing Table 2. During this test the average atmospheric temperature was 60° F.

TABLE 1

Evaporation Loss of Gasoline in Container Divided Into Vertical Compartments of Different Widths

Total loss in inches in six days, .0625, width of compartment, ⅛-in; loss, .20, width, ¼-in.; loss, .25, width, ½-in.; loss, .875, width, 1½-in.

TABLE 2

Theoretical Loss from 55,000 (117 Ft. in Diameter) Barrel Tank Equipped With Floating Roof Based on Table 1

Loss per year in in., 3.8, width of compartment between shell and shoe, ⅛-in.; loss, 12.2, width, ¼-in.; loss, 15.2, width, ½-in.; loss, 53.2, width, 1½-in.

Area of exposed liquid in slot, in sq. ft., 3.8, width, ⅛-in.; area, 7.6, width, ¼-in.; area, 15.3, width, ½-in.; area, 46.0, width, 1½-in.

Loss per inch depth in gallons, 2.4, width, ⅛-in.; loss, 4.7, width, ¼-in.; loss, 9.5, width, ½-in.; loss, 28.7, width, 1½-in.

Total loss per year in gallons, 9.1, width, ⅛-in.; total loss, 57.3, width, ¼-in.; total loss, 145.1, width, ½-in.; total loss, 1,530.0, width, 1½-in.

Total loss per year in barrels, .2, width, ⅛-in.; total loss, 1.4, width, ¼-in.; total loss, 3.5, width, ½-in.; total loss, 36.5, width, 1½-in.

Based upon the results of the laboratory evaporation test the loss on a 30-foot tank with an average of ¼-inch peripherical exposure, would be 2.32 gallons in six days.

A laboratory test of this kind is at best only approximate, but serves to indicate differences in evaporation rates between different widths of exposed liquid surface. Under field conditions the loss in tanks would probably be more than calculated from the results of such tests.

Field Evaporation Test

In order to determine the practical value of a floating roof, comparative filling tests were made on two 1,250-bbl. tanks both equipped in turn with ordinary canopy topped roofs and with floating roofs.

The tests were carried out by pumping 62° A.P.I. gasoline from one tank to the other and back to the first tank a certain number of times and measuring the volume of gasoline lost. The same pump and connections were used in all test runs excepting that when the tanks were equipped with floating roofs, the swing lines were removed and the gasoline entered the tank through a nipple flanged to the shell of the tank about one foot above the bottom. In all test runs the filling line was so placed that it ended below the surface of the liquid in the tank, thus eliminating loss due to spray. A steam pump was used to transfer the gasoline from one tank to the other.

The amount of gasoline in the tanks was determined by measuring the outage with a hook gauge. The reference points at which the gauges were taken were short strips of strap iron bolted to the top angle of the tank and filed to provide an exactly square edge where the tape was read. The strap iron was marked so that the gauges could be taken at exactly the same point each time. Before gauging tanks equipped with floating roofs, the roofs were "equalized," that is, each section of the shoe was pried away from the side of the tank and at the same time two men walked around the roof which caused it to wave slightly. This was done to eliminate possible effects of friction of the sliding shoe against the shell of the tank. Several gauges were also made without "equalizing" the roof to determine the effect of friction along the sides of the roof and it was found that the difference in gauges amounted to only ⅛ inch.

Methods Employed in Test

Temperatures of the gasoline were taken with a thief thermometer especially designed by the Bureau of Mines for evaporation work. The temperature of the gasoline was taken one foot below the surface, at mid-depth, and one foot above the bottom of the tank; from these observations the average temperature of the gasoline was calculated. All volumetric readings were corrected to 60° F.

The tanks used were previously in service at the refinery and were of the ordinary "run down" type, 30 feet in diameter and of 1,250 bbls. capacity. In the first tests both tanks were equipped with roofs which were made of one inch wood sheathing covered with 22 gage galvanized sheet iron. On the roof the sheets lapped, and at the edges they were crimped under and fastened to the top chime making a comparatively tight roof. The gasoline was moving in or out of the tanks more than half of the time, therefore, the loss due to breathing or leakage of air in and out would be a negligible proportion of the total evaporation loss found.

At the beginning of the test, Tank A was filled and about one foot of gasoline pumped into Tank B. All filling and other lines were then disconnected from both tanks except the necessary connections to the pump used in the test. The gasoline was pumped from one tank to the other during one day and allowed to stand over night, and on the following day pumped back to the first tank, after which the evaporation loss was determined. Two tests were made with this equipment, about 2,225 bbls. of gasoline being transferred in each test.

After two tests were made with the canopy roofs they were removed and the tanks equipped with the floating roofs previously described. The tanks were refilled as before and similar test runs made. For these tests it was not desirable to pump the gasoline so low as to allow the floating roof to rest on its "legs" (bottom supports) and thus introduce air under the roof, which would cause evaporation loss. In normal operation the roof does not usually fall to this point. On this account only 1,900 bbls. were pumped for each test with the floating roof. The roof displaced an average of about 2½ inches of gasoline. At the edge of the roof due to the extra weight of the shoe at that point, the submersion was greater, being about six inches.

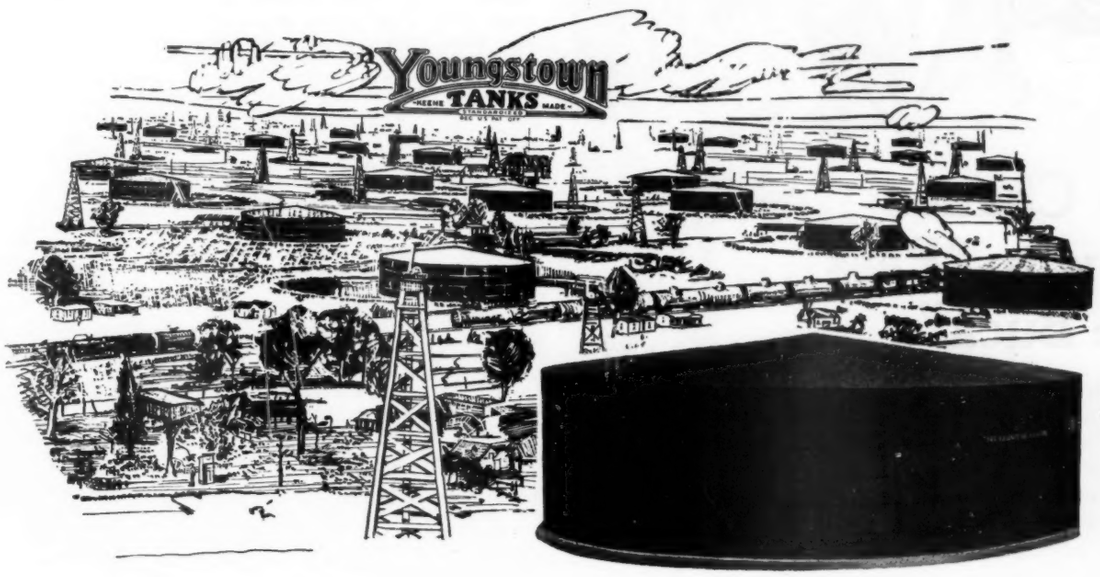
TABLE 3

Results of Pumping Tests Canopy Roof

Beginning of test, Nov. 23, 8 a. m.; end of test, Nov. 24, 4:15 p. m.; bbls. pumped, 2,225; bbls. loss, 4.58; per cent loss of gasoline pumped, .21; bbls. lost per 1,000 bbls. pumped, 2.1; average temperature gasoline, ° F., 57.5; gravity in degrees A. P. I. at 60° F., 62.2.

Beginning of test, Nov. 25, 8 a. m.; end of test, Nov. 26, 4:45 p. m.; bbls pumped, 2,225; bbls. loss, 3.15; per cent loss of gasoline pumped, .14; bbls. lost per 1,000 bbls. pumped, 1.4; average temperature gasoline,

(Continued on Page 92)



Write on your business stationery for a free copy of Bulletin 500, fully illustrated and containing the most valuable compilation of tables, specifications, diagrams, conversion factors and general information ever published.

Nearly Four and a Half Million Barrels of Steel Storage

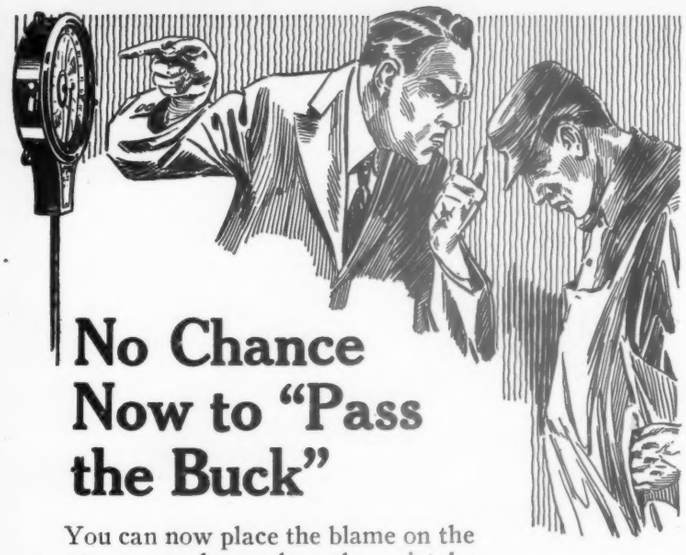
ONE of the largest installations completed by this company in recent years consisted of eighty 55,000-barrel field tanks, all of which were under construction at one time, 700 of our men being employed daily in the erection. This order representing nearly four and a half million barrels of steel storage is typical of the large capacity which is back of the product, "YOUNGSTOWN" Tanks.

The YBT Co.

YOUNGSTOWN BOILER & TANK Co.

YOUNGSTOWN, OHIO.

YBT Co.



No Chance Now to "Pass the Buck"

You can now place the blame on the *exact* man who makes the mistake when goods are ruined or other damage occurs as a result of not maintaining correct temperature. For, by installing a Columbia Recording Thermometer with the new *Time Punch* attachment, you have an automatic watchman that not only unerringly points out any carelessness or neglect, but also *pins down the responsibility and leaves no loophole for alibis or excuses.*

The chart gives a continuous day-and-night record of the temperature itself. But that alone isn't enough—you also want to know whether the temperature has been regularly inspected and undue variations promptly and properly corrected. And this the Time Punch attachment tells you when you use.

Columbia Recording Thermometers With Time Punch

The operator simply pushes a button when making each inspection, and the exact time of the inspection is immediately recorded on the edge of the dial, while the temperature chart shows the temperature at that particular minute. Thus, you get the whole story in an indisputable form.

If the operator fails to make an inspection at proper intervals, then the failure is shown by a blank.

Columbia Recording Thermometers (also Recording Gauges and Tachometers) with the new Time Punch attachment cost no more than an ordinary recorder alone—you get an extra check on temperature control at no extra cost. And it's a check that works both ways—the conscientious operator will take pride in having the record of his faithfulness always in evidence, while the careless or lazy operator will immediately brace up and try to avoid a bad record.

Catalog H-5 gives full information.

A copy free on request.

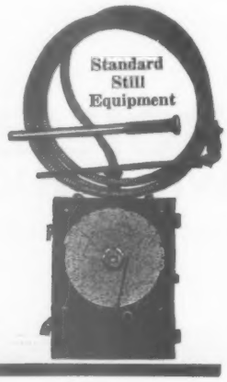
American Schaeffer & Budenberg Corporation
SUCCESSORS TO
Schaeffer & Budenberg Mfg. Co. AND American Steam Gauge & Valve MFG. CO. DIVISION

BROOKLYN, N. Y.

•Boston	Cleveland	New Orleans
Buffalo	Detroit	Philadelphia
•Chicago	•Los Angeles	•Pittsburgh

•Stock carried at these branches

Exclusive representatives for Canada:
THE CANADIAN FAIRBANKS MORSE CO., Ltd.
Montreal Toronto



41

KEROSENE IS STRONGEST FEATURE IN EASTERN REFINED OIL MARKETS

By N. O. Fanning

NEW YORK, Dec. 3.—The refined oil markets in the eastern territory presented little actual change during the past week. Export gasoline and kerosene in cases were advanced one-quarter cent per gallon, bringing motor gasoline in cases to 24.40 cents per gallon, standard white kerosene to 17.15 cents and water white to 18.15. The advance is due to the increased cost of the cases.

The Atlantic Seaboard gasoline markets are in about the same condition as they have been during the last three weeks. Concessions continue to be made by small independent marketers, while the large markets are sticking pretty close to their regular tank wagon prices. Feeling now is quite general, however, that prices are at the bottom, and that the next change will be upward, although it may not come for some time.

Sentiment in oil circles seems to be more optimistic than at any time during the fall, and this doubtless is a reflection of actual betterment already realized, as well as an expectation of future improvement. So far as gasoline sales are concerned, they have held up much better than was expected, the weather having been quite favorable from the point of view of motoring. There will probably be a larger reduction in stocks of gasoline this winter than has been anticipated in the trade.

Kerosene Market Firm

Kerosene continues the chief feature of the refined oil markets from the point of view of strength. This is believed to be a direct result of the increased demand for furnace oil, which has cut into stocks of low-grade kerosene. In addition, the export demand for kerosene has shown considerable increase of late, so that this has provided a further outlet for the product.

Furthermore, there was an unusually heavy demand for kerosene this Summer, which resulted in a steady decrease in stocks on hand, and a strengthening of the statistical position of this product.

The fact that kerosene is now selling for 15 cents per gallon, tank wagon basis, in the East, compared with 15½ cents for gasoline, is believed to have some connection with the development of the market for furnace oil. While there is still a considerable market for kerosene for lighting purposes, and for domestic oil heating in kerosene stoves, the great bulk of the kerosene supply is now generally divided into two parts. The first consists of kerosene, as such, and is the higher gravity product, while the second is furnace oil, or low gravity kerosene. The higher grade product, which now sells for 15 cents per gallon, is almost a low grade of gasoline, and is used partly as a fuel for farm tractors. The lower grade product, or furnace oil, sells for 10 cents per gallon, and is used in domestic oil-burning devices which require a higher gravity oil than that known as fuel oil distillate. An average of the prices of the two grades of kerosene, therefore, would give a price of 12½ cents per gallon, which about corresponds with the former differential between gasoline and kerosene prices.

Fuel Oil Uncertain

The bunker oil market is rather uncertain. In some quarters a further drop in price is expected. The present quotation at New York is $1.35 per barrel, lighterage 6½ cents per barrel extra. Some are looking for a decline to around $1 per barrel, due to an increase in supply, particularly of Mexican fuel oil. The price of the latter is now considerably lower than six months ago, which is also a factor.

Lubricating Oil Position

The lubricating oil market is firm, due to a continuation of good sales and a stiffening in prices in the Mid-Continent and western Pennsylvania refinery districts. Gulf Coast crude, a big factor in the lubricant market, is also said to be commanding small premiums.

There is no let-down in the export market. Present heavy shipments are largely in fulfillment of yearly contracts which are understood to expire around December 31. It is stated in some quarters that renewal of these contracts on an equal basis is unlikely, as foreign consumers are pretty well stocked, from all indications.

The low export prices which have prevailed have stimulated buying abroad to a great extent, and with evidence of an advance in prices next year, foreign purchases may be somewhat curtailed.

Oil Receipts by Water

Oil receipts by water at Atlantic ports during the week ended November 30 averaged 455,000 barrels daily. The feature was a heavy drop in receipts at Baltimore. Receipts for November were 436,000 barrels daily, against 498,000 barrels during October. October was a high record month. Receipts from Mexico fell off considerably during the week ended November 30, while those from the Pacific Coast continued heavy.

The following table shows the estimated daily average receipts of crude and refined oil by water at the principal Atlantic Coast ports for the last two weeks, and for the months of November and October, 1923, in barrels:

	Week Ended— Nov. 30	Nov. 23	Month— Nov.	Oct.
New York	218,000	226,000	215,000	236,000
Philadelphia	92,000	102,000	95,000	108,000
Baltimore	11,000	41,000	28,000	41,000
Boston	18,000	... ...	24,000	26,000
Fall River	31,000	... ...	9,000	18,000
Providence	11,000	21,000	13,000	17,000
Norfolk	21,000	11,000	12,000	9,000
Charleston	35,000	... ...	11,000	11,000
Miscellaneous	18,000	66,000	29,000	31,000
Total daily average	455,000	467,000	436,000	498,000

Mexican crude oil prices remain practically unchanged at 80 cents per barrel for light and 50 cents for heavy, f.o.b. Tampico.

SUGGEST DISTRIBUTION CHANGE

NEW YORK, Dec. 3.—Acting Mayor Murray Hulbert suggested in a letter to Acting Aldermanic President William T. Collins yesterday that the Board of Aldermen amend the code of ordinances to permit the use of tank wagons in the delivery of gasoline in New York City.

Mr. Hulbert said that New York City paid the highest price for gasoline of any large city in the country. The present market price here is 16½ cents a gallon. The gasoline is only delivered in 55-gallon steel drums, "involving additional labor and equipment costs amounting to approximately 2 cents a gallon."

NEW SERVICE STATIONS

NEW YORK, Dec. 3.—The Standard Oil Co. of New Jersey has recently opened new service stations as follows: Lovett and Lake Aves., Main St. and Bellamy Ave., London Bridge and Broad Creek Place, Norfolk, Va.; High and Cooke Sts., Portsmouth, Va.; Kimball Ave., Roanoke, Va.; Fayetteville and Whitted Sts., Durham, N. C.; Hillsboro and West Sts., Raleigh, N. C.; Liberty and Chestnut Sts., Winston Salem, N. C.; Main and Tribble Sts., Anderson, S. C., and Edgefield and Maxwell Aves., Greenwood, S. C.

A FACTOR IN THE EAST

The purchase of a large amount of bulk storage by the Mexican Petroleum Corp. of Louisiana in taking the property of the American Oil Co. at Baltimore, Md., is pointed to by many refiners as an act on the part of this company to become an increasingly large factor in the distribution of gasoline in the East.

The Canfield Oil Company, Cleveland, Ohio, are installing the Sharples Process for the dewaxing of long residuum in their refinery at Coraopolis, Pennsylvania.

The dewaxing of a long residuum by the Sharples Process permits the greatest production of viscuous neutrals and low cold test bright stock from the least amount of crude.

Sharples-made bright stock has a cold test below 25.

MAX B. MILLER & CO. Inc.
501 FIFTH AVENUE
NEW YORK

ACME

Remember
Acme
Storage
5½
Million
Gallons!

Road Oil
Fuel Oil
Gas Oil
Distillate
Kerosene
Naphtha
Gasoline

Single Cars or Train Loads

If you want to sell or buy get in touch with our office nearest you

Remember Acme Storage—It Pays!

OIL STORAGE PLANTS
West Tulsa, Okla. Blue Island, Ill.
(Chicago Switching District)

ACME PETROLEUM COMPANY

CHICAGO, ILL.
910 S. Michigan Ave.

KANSAS CITY, MO.
402 Security Bldg.

DALLAS, TEXAS
Magnolia Bldg.

CHICAGO MARKET STILL OPTIMISTIC

Upward Trend of Prices Shows Signs Lull as Jobbers Endeavor to Hold Down Inventories for December 31 Tax Reports. Open Winter Season Sustaining Demand for New Navy Gasoline. Natural Gasolines Slow.

By Ralph T. Baker

CHICAGO, Dec. 3.—The upward price trend in refined products marketed in this district showed an inclination to flatten out during the latter part of the past week. There has been no great amount of weakening but it was made apparent on many sides that the steady increase of the past few days was approaching a lull, considered by most students of the market as merely temporary. New Navy and kerosene were helped materially by the stronger tendencies evidenced during the early part of the week.

The optimism of the week before was still effective to a marked degree. Just as 6-cent New Navy had passed, the 6¼-cent stuff vanished and the prevailing price to the trade was 6½ cents up nearly to 7 cents. A small amount of 6⅜-cent New Navy available during the first part of the past week disappeared and bottom was firmly fixed at 6½ cents during the latter half.

Some sales of Navy were reported at 7 cents, with the bulk of the product passing at 6⅝ cents and a large proportion at 6¾ cents. Altogether it was a good week for New Navy, the open season sustaining motoring and a fair amount of material reported in transit. The demand was considered unusual for this time of the year, but optimists argue that motoring is becoming an all-year essential rather than a seasonal pleasure. Many jobbers expect to show a large increase in sales over former winter seasons during the coming months.

Optimistic as to Future

With the Taxman Refining Co. (Cosden) quoting 7½ cents to the trade, and other large refineries asking 8 cents, 7½ cents and 7 cents, many men familiar with conditions feel that the prevailing price on New Navy during the next few days will be around 7 cents. One refiner declared, "We have the best outlook now that we have seen in 18 months. The liquidation in the oil industry is over and we are going back to business on a sound level. Export orders will carry the refiner over December in good shape at the present prices or an advanced figure. After January 1, 1924, the domestic demand for refined products will cause additional price increases, bringing about a better condition for all branches of the industry."

Buying on the part of the jobbers during recent days has been on a hand-to-mouth basis. As a result they have no great supplies on hand now. They are expected to continue this policy during the coming 30 days, for the purpose of keeping down their inventories. This condition will be abated December 31, 1923, with the result that a number of large orders are expected January 1, 1924. The present situation is generally conceded to be optimistic. Crude and refined prices are thought to be on bed rock. Jobbers feel constrained to put off their purchases to avoid taxation, but it is thought probable they will take advantage of the low prices early in 1924 and create a big demand for Navy in their scramble to stock up.

Navy is being offered at 6¾ cents over December with considerable interest displayed and some orders at this figure. Several export inquiries on the higher grades of gasoline have been received by refiners during the week. It is a question whether this new export demand during December will be sufficient to hold up the anticipated bearish movement by the brokers early in December. Many men feel that there may be a short sag in the market, but that it will recover quickly during the latter part of the month. It is thought by most men that the edge is definitely off of the recent "bull" movement, while others point to the decreased stocks and curtailed runs as well as the continued demand in anticipation of sustained high prices during the coming week. Many admit that they are "on the fence," and are awaiting developments.

Holding Up Price

The higher gravity gasolines showed but little advance during the week, holding but little better than steady with the prices of the previous week, except the 60-62 400 end point product, which was stronger in sympathy with New Navy. Generally, the higher grades were slower in movement, the open winter contributing largely to the decreased demand from this source influencing the prices. Naphthas held steady with the prices of the previous week and demand was about as usual. Little interest in these products was exhibited.

The movement on the part of the bullish refiners to hold up the price of New Navy and other products during December seemed to have gained impetus during the past week. Just as the jobber wants a minimum amount of taxable product in his possession on December 31, 1923, so also does the refiner want the highest possible invoice price for all crude and petroleum products in his tanks on that date. They are not expected to weaken under the bearish attacks of the brokers, who may in turn be forced to sustain the present increased prices to fill their orders should the supply of cheaper product prove inadequate. The contest promises to be interesting with the unbiased observers favoring the refiner. If the good weather should hold for a large part of this month, it can be expected that the demand will continue and the present prices will remain firm or advance.

Natural gasolines again showed a slow movement with a slight shading visible in the prices as compared to those listed during the week preceding. Blends also were weak, due to the recent bed-rock price of New Navy, and the decreased seasonal demand for the higher gravity blended fuel.

Natural gasolines slumped in sympathy with blends and are not expected to recover until blends show some signs of life. They are expected to be dull as long as the open season continues and the price of New Navy stays near its present boundaries. Few sales of natural gasoline have been reported. There is little interest in it and blends arouse scarcely any more attention.

Distillate Weakening

There were indications that the edge was off the demand for kerosene for export last week. The price remained steady to strong with that of the previous week, however, with every indication that it would hold for some time at approximately the present figure. New export orders are rumored and there are many cars lacking on previous orders, enough, most men think, to maintain a firm structure.

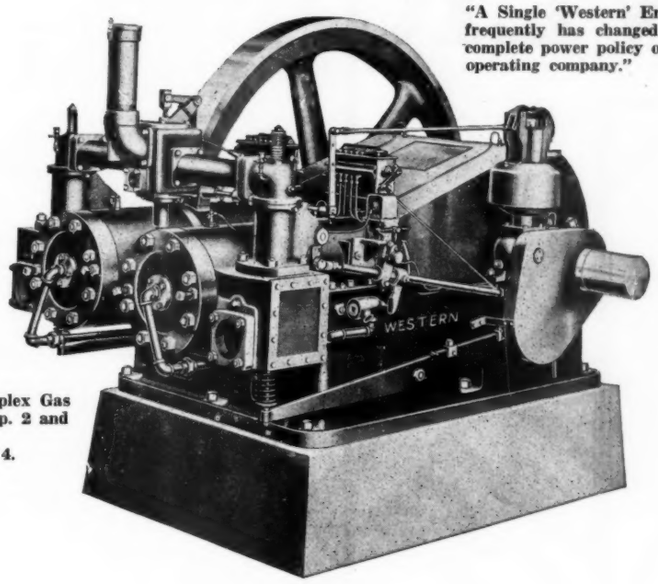
The open season has caused disappointment in the anticipated demand for straw distillate and gas oil. Regardless of the enormous growth in home burner installations, distillate is having trouble maintaining its position and price. The increased demand has caused increased manufacture, and the pleasant weather has put the brakes on consumption of these burning oils.

Export orders have cleaned up all old

(Continued on Page 114)

"WESTERN"

"A Single 'Western' Engine frequently has changed the complete power policy of an operating company."



The "Western" Duplex Gas Engine. 80-320 h. p. 2 and 4-cylinder units. Catalog No. 4.

Three Users of "Westerns" Tell Why

No. 1 "During 1918 we started using 'Western' 30 and 40 H. P. pumping engines and have used a large number of them since that time. They have been satisfactory in every respect and are very economical in the matter of fuel. They use less fuel and oil than any other pumping engine we have . . . . We have bought practically all 'Western' Engines since 1918."

No. 2 "I'm glad to state that we have 22 'Western' Gas Engines on our lease and they are giving us wonderful service. We use them to pump wells, pull rods and tubing, clean out and redrill. They have lots of power and are not complicated and I think they are the quickest and snappiest gas engines on the market."

No. 3 "At Coalinga we have six 120-H.P. 'Western' Gas Engine units which have been operated three years and they are practically as free from trouble today as when they started. If we enlarge our present plants we will install 'Western' Engines."

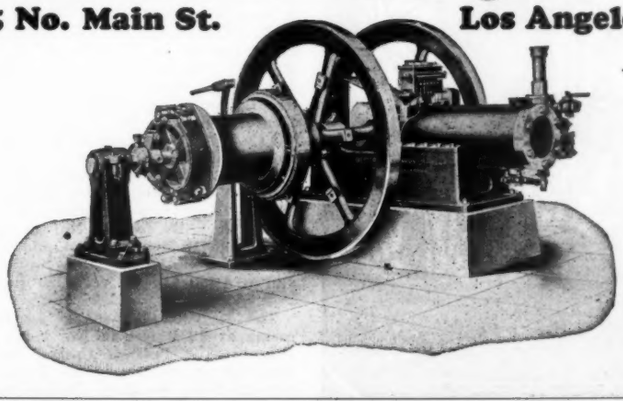
If you want further proof of "Western" supremacy in oil country service, write us direct for complete and definite records of performance and costs.

Western Machinery Company

905 No. Main St. Los Angeles, Calif.

San Francisco, California

Bakersfield, California



Tulsa, Oklahoma

Okmulgee, Oklahoma

"Western" Oil Field Engine & Reverse Gear 25-40 H. P. Catalog No. 305.

421

GRAVER

PROMPT SHIPMENT

Graver has anticipated your requirements for steel storage.

They have steel on hand ready for the immediate fabrication of all standardized sizes of Graver Steel Tanks.

Increased facilities have made possible faster handling of orders.

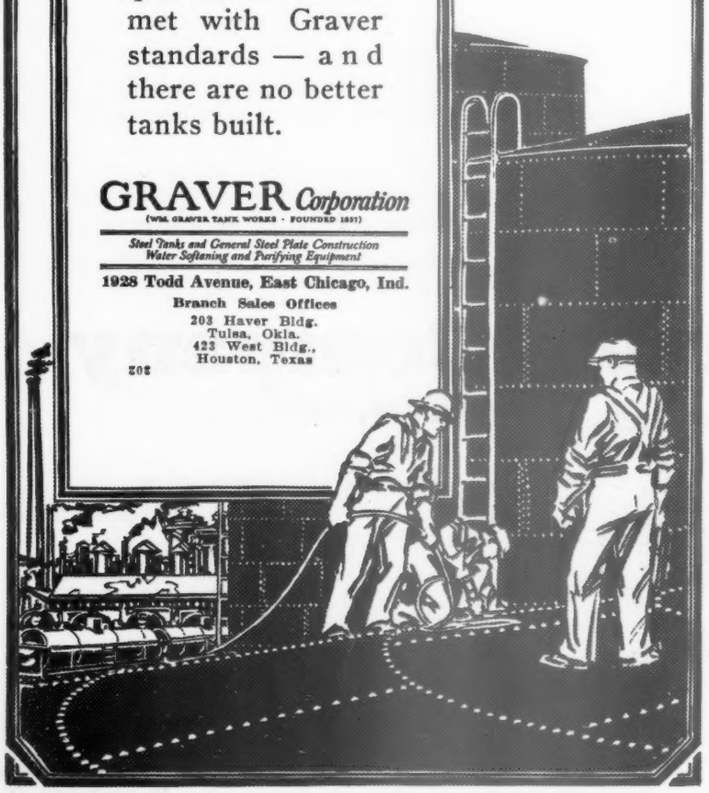
Your storage requirements can be met with Graver standards — and there are no better tanks built.

GRAVER *Corporation*
(WM. GRAVER TANK WORKS · FOUNDED 1887)

Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment

1928 Todd Avenue, East Chicago, Ind.

Branch Sales Offices
203 Haver Bldg.
Tulsa, Okla.
423 West Bldg.,
Houston, Texas



N. LOUISIANA-ARKANSAS

(Continued from Page 54)

is a wildcat test to be drilled by Ulray and others on the Frost Johnson Lumber Co. lease in Section 3-11-15, 7 miles east of Logansport. Derrick is up and drilling will be started at once.

Red River Parish: The U. S. Drilling Co. got salt water in No. 3 Fletcher, Section 10-12-10, on the east edge of the Bull Bayou district, and the test was abandoned at 2,810 feet.

Caldwell and others are drilling at 1,515 feet in No. 1 Welch, Section 7-14-10, and the Fortuna Oil Co. is arranging to pump No. 58 Purh, Section 7-12-10, at 2,806 feet.

Louisiana Wildcats

Bienville Parish: The Standard Oil Co. tested at 2,500 feet in No. 1 Leona Scott, Section 21-17-8, with no showing of oil or gas. The test is 10 miles southwest of Gibsland.

Caldwell Parish: Culver and others have rig up ready to start drilling on fee land in Section 21-14-4, 20 miles south of Monroe.

Bossier Parish: George O. Baird is down 400 feet in No. 2 Montgomery, Section 18-16-11, on the east edge of the Elm Grove gas district. Palmer & Davidson are also drilling two wells in this vicinity, having a derrick up for No. 1 Caplis in Section 12-16-12, and 6-inch set at 800 feet in No. 1 Childers, Section 18-16-11.

In the north end of Bossier Parish, the Oil Field Gas Co. is drilling at 850 feet in No. 1 Bolinger, Section 29-23-11, 10 miles northeast of Plain Dealing, and within 4 miles of the Arkansas line.

Perkins and others plugged back from 2,600 feet to 2,565 feet in No. 2 Vance and are trying to make a gas well. The test is in Section 18-19-13, 8 miles north of Shreveport.

Skannel and others made a test at 2,558 feet in No. 1 fee, Section 22-17-12, getting 1,000,000 feet of gas, but are drilling deeper. The test is about half way between Shreveport and the Elm Grove gas territory.

La Salle Parish: The Urania Petroleum Co. is drilling at 2,120 feet in No. 2 Urania, Section 20-10-2e, 20 miles east of Winnfield.

Lincoln Parish: The Four Creek Oil Co. is trying to shut off a fresh water flow at 790 feet in No. 1 Colvin, Section 27-20-3w, 15 miles southwest of Farmerville and about the same distance southeast of Homer. Three miles northwest of this test, the Middle Fork Syndicate is arranging to test six feet of sandy shale at 2,355 feet in No. 1 McKay, Section 8-20-3w.

Monroe Gas Field

Morehouse Parish: Cronin & McKenzie are drilling at 1,280 feet in No. 2 Perry, Section 13-20-4; Ladel and others at 2,225 feet in No. 16 fee, Section 21-20-5; Morris, trustee, set 6-inch casing at 2,215 feet in No. 1 Plemmons, Section 20-20-5, and at 2,212 feet in No. 1 White, Section 28-20-5, and the Southern Carbon Co. is drilling at 50 feet in No. 11 Spyker, Section 17-20-5.

Ouachita Parish: The Atlas Oil Co. is drilling out plug at 3,068 feet in No. 2 West Virginia Timber Co., Section 3-18-5; Chester Carbon Co., drilling at 2,000 feet in No. 1 Flournoy, Section 22-19-5; Consumers Gas Co. at 2,060 feet in No. 2 Richie, Section 8-19-5; Cosmos Carbon Co., at 2,212 feet in No. 2 Hancock, Section 20-19-5, and Fortuna Oil Co. set 6-inch casing at 2,125 feet in No. 1 Cole, Section 35-20-4.

Haynes and others are drilling at 2,110 feet in No. 2 Dixie Lumber Co., Section 54-17-3; Hosterman and others set 6-inch casing at 2,168 feet in No. 1 Collins, Section 31-19-5, and Ladel and others are drilling at 1,780 feet in No. 17 fee, and at 1,480 feet in No. 8, Section 29-20-5.

The Magnolia Carbon Co. set 6-inch casing at 2,180 feet in No 1 fee, Section 18-20-5; Peerless Carbon Co. set 12½-inch at 180 feet in No. 2 fee, Section 28-19-5; Southern Carbon Co. is drilling at 2,250 feet in No. 24 and has derrick up for No. 25 in Section 27-19-5, and has set 10-inch casing at 310 feet in No. 6 Fairbanks, Section 43-20-5.

The Texas Louisiana Producing Co. is drilling at 525 feet in No. 3 fee, Section 4-19-5; The Texas Co. set 8-inch at 965 feet in No. 3 Gibbs, Section 29-19-5, rigging up to drill No. 4 Gibbs in Section 20-19-5, and its No. 3 O'Neal in Section 33-19-4, is blowing 5,000,000 feet of gas at 2,250 feet but will be drilled deeper.

The United Oil & Gas Producing Co. is drilling at 190 feet in No. 1 Kerr, Section 12-19-4, and the West Virginia Oil & Gas Co. is drilling at 1,700 feet in No. 2 West Virginia, Section 4-18-5.

Sabine Parish: The Gladys Belle Oil Co. has abandoned its test on the Raines lease in Section 33-9-11, having drilled to a depth of 3,896 feet without satisfactory results.

Union Parish: Much was expected of the Union Parish Drilling Co.'s No. 3 Clark, in Section 17-23-1e, in the Farmerville district in the north end of Union Parish, but a test made at 2,275 feet developed only a small showing of dead oil and the well will be drilled deeper. Another well in this vicinity is Collins & Woodley's No. 1 Newsom, in Section 23-23-1e, which developed salt water at 2,550 feet and will be abandoned. Love Brothers got salt water at 2,247 feet in No. 1 Security Trust, Section 12-23-1w, and are making a deep test in which they are down 2,570 feet.

The Ohio Oil Co. has derrick up for a test in Section 15-20-1w, 4 miles southwest of Farmerville. The company has a large block of acreage and this will make an exceptionally interesting test of new territory.

The Empire Gas & Fuel Co. is drilling at 2,375 feet in No. 1 Hamilton, Section 30-19-1e, 11 miles south of Farmerville. In the east end of the parish, the Union Power Co. has four wells drilling on the Union Sawmill Co. lease, about 10 miles northwest of the Monroe gas field.

Webster Parish: In the north end of the parish, the Ohio Oil Co. is drilling at 2,270 feet in No. 1 Martin, Section 34-23-10, 18 miles east of Plain Dealing.

In the Cotton Valley district, O'Brien and others are down 50 feet in No. 1 Doles, Section 26-21-9, and the Oil Field Gas Co. is drilling at 710 feet in No. 1 Hope Estate, Section 13-21-10. Palmer & Blunt are arranging to set 6-inch casing and test for a shallow well at 318 feet in No. 1 Anders, Section 6-18-10, having encountered a promising showing of sand.

Arkansas Wildcats

Calhoun County: Harris & Bickle are down 2,180 feet in No. 1 Freeman Smith Lumber Co., Section 26-16-13.

Drew County: W. H. Rhodes and others are drilling at 930 feet in No. 1 Martin, Section 27-12-8.

Hempstead County: Johnson and others are rigging up No. 1 State, Section 12-13-27. Myers and others are drilling at 1,786 feet in No. 1 Nichols, Section 17-11-25. Orr and others are down 1,535 feet in No. 1 Yates, Section 17-12-23. G. W. Simmons, trustee, is down 2,135 feet in No. 1 Adams, Section 36-12-27.

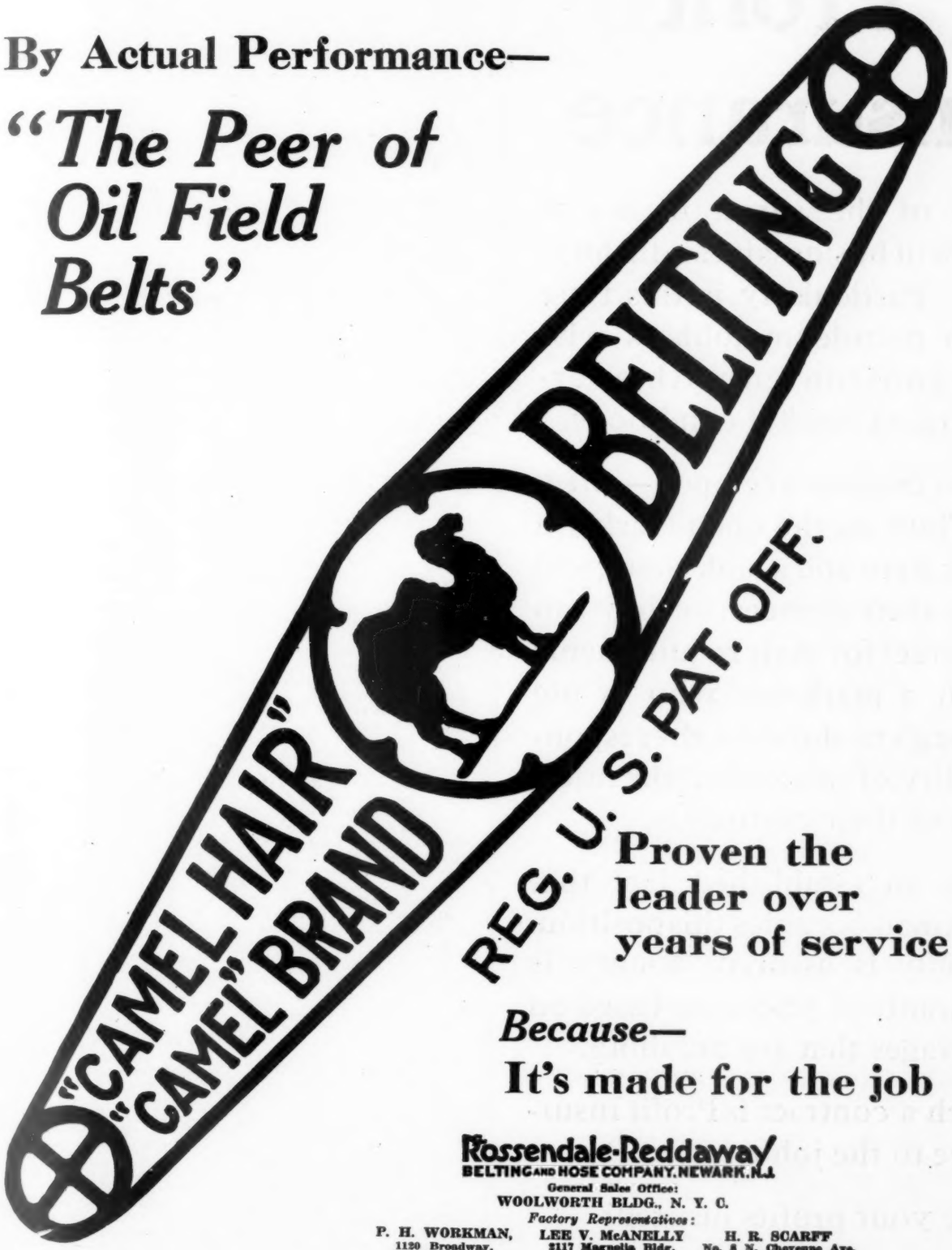
Miller County: Cochran & Ray are down 2,512 feet in No. 1 Adams, Section 8-14-27. Kingsley and others have set 10-inch casing at 500 feet in No. 1 Thompson, Section 33-14-28.

Nevada County: Day, trustee, is drilling at 2,410 feet in No. 1 Westmoreland, Section 10-12-21. The Dixie Oil Co. is waiting on standard rig to pump No. 2 P. R. Womack at 2,000 feet, Section 10-14-21. The Prescott Oil Co. is drilling at 2,285 feet in No. 1 Henry, Section 10-12-20. Smitherman-McDonald are down 975 feet in No. 2 Womack, Section 10-14-21. Steele & Sandlin are down 1,555 feet in No. 1 B. Martin, Section 13-14-22.

The Transcontinental Oil Co. is arranging to test No. 1 Blakely at 1,605 feet, Section 14-13-20.

By Actual Performance—

"The Peer of Oil Field Belts"



Proven the leader over years of service

Because—

It's made for the job

Rossendale-Reddaway
BELTING AND HOSE COMPANY, NEWARK, N. J.

General Sales Office:
WOOLWORTH BLDG., N. Y. C.

Factory Representatives:

P. H. WORKMAN, 1120 Broadway, DENVER, COLO.

LEE V. McANELLY, 2117 Magnolia Bldg., DALLAS, TEX. Phone Y-4842

H. R. SCARFF, No. 8 N. Cheyenne Ave., TULSA, OKLA. Phone Osage 1273

ON SALE AT ALL FRICK-REID STORES

Profit Insurance

One of the surest means of profit in business is careful buying. Particularly is this true with petroleum jobbers who are confronted with ever-changing market conditions.

Two courses are open—they can buy on the open market, a tank here and a tank there, and take their chances; or they can contract for their requirements with a marketer who is big enough to shoulder the responsibility of protecting the interests of their customers.

It is an established fact that Taxman occupies this position. Supply is assured, quality is guaranteed, prices are based on averages that are unfailing.

Such a contract is Profit Insurance to the jobber.

Are your profits insured?

TAXMAN REFINING COMPANY
Sales Agents
New York Life Building, Kansas City
116 S. Michigan Ave., Chicago

GOVERNMENT TESTS WITH FLOATING ROOF

(Continued from Page 84)

° F., 55.7; gravity in degrees A. P. I. at 60° F., 61.8.

Average both tests, bbls. pumped, 2,225; bbls. loss, 3.86; per cent loss of gasoline pumped, .17; bbls. lost per 1,000 bbls. pumped, 1.7; average temperature gasoline, ° F., 56.6.

Floating Roof

Beginning of test, Dec. 28, 8:20 a. m.; end of test, Dec. 29, 8 a. m.; bbls. pumped, 1,900; bbls. loss, .20; per cent loss of gasoline pumped, .01; bbls. lost per 1,000 bbls. pumped, .1; average temperature gasoline, ° F., 56.4; gravity in degrees A. P. I. at 60° F., 61.7.

Beginning of test, Dec. 29, 8:20 a. m.; end of test, Dec. 30, 11:45 a. m.; bbls pumped, 1,900; bbls. loss, 1.37; per cent loss of gasoline pumped, .07; bbls. lost per 1,000 bbls. pumped, .7; average temperature gasoline, ° F., 53.4; gravity in degrees A. P. I. at 60° F., 61.7.

Average both tests, bbls. pumped, 1,900; bbls. loss, .78; per cent loss of gasoline pumped, .04; bbls. lost per 1,000 bbls. pumped, .4; average temperature gasoline, ° F., 54.9.

From Table 3 the average saving with the floating roof is 1.3 bbls. per 1,000 bbls. pumped, which amounts to $8.19 per 1,000 bbls. of gasoline handled, assuming the price of gasoline to be 15 cents per gallon. It should be noted that these tests were made in cool weather. During the summer months a saving of twice that shown by this test would be a conservative estimate.

Fire Tests

The floating roof used in the fire tests differs from that used in previous tests in that the liquid seal was eliminated. In order to prevent the escape of vapors from the vapor space between the shoe and the tub, a continuous piece of wire reinforced asbestos cloth was attached to the horizontal plate of the shoe, the other side being attached to the vertical side of the tub. This seal was not air tight, as only one thickness of the wire inserted asbestos was used without any cement.

On this roof the shoe sections were supported by a series of curved hangers. These hangers lean toward the tank so that the weight of the shoe throws it gently against the tank shell. A system of truss bracing was used to hold the bottom of the tub flat. The tub was made of 3/16-inch steel plate, riveted and electric welded. The tank was 30 feet in diameter, 6 feet high and was made of ¼-inch steel plate, riveted and calked.

The roof was first floated on about 3 feet of water to test the tank and roof for leaks. One thousand and sixty gallons of gasoline were then pumped into the tank, which provided about 2½ inches of gasoline under the tub. This insured that the entire bottom surface of the tub was in contact with the gasoline.

The following is an Engler distillation analysis made by the Bureau of Mines of the gasoline used in the fire tests:

Mark	Temp. in ° F.
First Drop	99
10%	181
20	219
30	250
40	273
50	293
60	307
70	329
80	352
90	383
End Point	433

Details of Fire Tests

The fire tests were divided into several parts in order to determine the effect of fire at different points on the roof. The tests were made on the afternoon of September 25, 1923. The average atmospheric temperature was 75° F. with moderate to fresh southerly winds.

Test No. 1 was made to determine the effect of a flame brought into contact with the vapors in the opening between the shoe and the tank shell. Also attempts were made to ignite the exposed portion of the gasoline by dropping a lighted taper into this space. In each instance there was a flash around the circumference of the tank, which consumed the gasoline vapor and air mixture already in this opening. There was no evidence of fire after the first flash. It is interesting to note that when the flame was lowered into the slot between the shoe and the tank, the flash occurred when the flame was about half way between the surface of the gasoline and the mouth of the slot.

Test No. 2 was made to determine the effect of a small fire on the roof of the tank near the center.

Several quarts of gasoline were poured on the roof near the center and ignited. The fire burned for a little over 6 minutes. At times the flames were about 6 feet high. This gasoline burned without igniting the exposed gasoline in the slot around the shell. However, this was a comparatively small fire and the flames did not reach the shell of the tank.

Test No. 3 was made to determine the effect of a steady fire on a shoe of the roof.

About two quarts of gasoline were poured on the shoe of the tank and ignited. This burned for about 2 minutes. There was only one flash around the circumference of the tank, as occurred in Test No. 1. The exposed gasoline in the slot between the shoe and the tank shell did not ignite.

Test No. 4 was made to determine the fire hazard when the roof was covered with inflammable material and was the severest test of all. About five gallons of gasoline were poured on the roof and ignited. The fire burned for a little over 15 minutes. The flames constantly licked over the sides of the tank and in the center they were about 8 feet high. In several places around the shoe the exposed gasoline caught fire and burned for about 5 minutes after the gasoline on the roof was consumed. The fire around the shoe was extinguished by cooling the hot shell of the tank, shoe and tub of the roof. One man accomplished this by using four 2½ gallon fire extinguishers. Part of the contents of the last extinguisher was played directly on the flames.

Discussion of Fire Tests

The above tests show that it is practically impossible for gasoline to burn continuously in a tank properly equipped with a floating roof as described, even though the vapors between the shoe and the tank shell are ignited by means of sparks or fires. However, if there is any inflammable material on the roof and it is ignited, it will heat the gasoline immediately under the roof so that it will vaporize. The vapor escaping around the shell will then become ignited and burn until the inflammable material on top of the roof is consumed. In Test No. 4 in order to extinguish the fire, the roof around the shell was first cooled, thus preventing the rapid formation of additional vapors. The ease with which the fire was extinguished indicates that the fire would probably have snuffed itself out if the seal had been vapor tight. As a matter of fact in a later test made on this roof after the seal was made gas tight, it was reported that the fire snuffed itself out after the inflammable material on the roof had been consumed.

Conclusions

The primary function of the floating roof is to reduce evaporation losses by eliminating the vapor space above the oil, thus preventing breathing losses and losses due to circulation of air over the liquid. By elimination of the vapor space the fire hazard is also reduced in that there is no large confined space filled with explosive vapor, nor is there any large body of liquid exposed to the air. With this type of construction the exposed liquid is in a very narrow slot of sufficient depth to prevent free circulation of the air which is necessary to support combustion.

TEXAS CO. CHICAGO STATIONS

CHICAGO, Nov. 26.—The Texas Co. has completed several filling stations in this city and surrounding section and they are now open for business. The company recently announced a program of 40 stations to be in operation by spring.

"Say Boss Don't Forget those Vulcan Back-Ups!"

So says the man on the job who has once tried out this he-man wrench.

It is scientifically built for the hardest conditions—a real tool for the job.

"Jaws Can't Spread or Work Loose"

The extra large through bolt and nut for fastening the jaws prevents them from spreading, or working loose. The through bolt itself is far stronger than the tested chain. A strain sufficient to rupture the latter has no effect on the bolt.

"Proof-Tested Chain"

A proof-tested chain which means that every link has been actually tested to two-thirds of its guaranteed breaking strain.

Longer chains for larger sizes of casings can be supplied when required.

Shall We Send Our Catalog?

J. H. Williams & Co.

Brooklyn Buffalo Chicago

"Handle just the right size for Rotary"

The short, stubby handle is supplied with ample strength by the special grade of stiff steel used in the manufacture.

"Greater Bearing Made Possible on Pipe or Casing"

Six sets of chain links, also the alloy steel swinging link for attaching to through bolt, are much longer than ordinary. Their extra size provides greater bearing on drill pipe or casing, and increased strength at the point of greater working stress.

WILLIAMS

SUPERIOR DROP-FORGED TOOLS

Gasoline For Winter Use

Imperial Gasoline is ideal for cold weather. Low boiling point makes for maximum motor efficiency. Imperial gasoline is *straight run*, and contains no cracked gas or high boiling points.

At Ardmore the Imperial Refining Company manufactures a special gasoline 60-62 gravity, 428 end point, with excellent intermediate specifications. Also a new navy grade, 58-60 gravity gasoline embodying the full specifications—the all-year gasoline.

At El Dorado the Kettle Creek Refining Company is producing a special winter gasoline of 62-64 gravity, end point 425 or under, low boiling point, made especially for quick start. We also make at El Dorado the regular new navy gasoline, 58-60 gravity.

Wire us your needs. We control an output of 10,000 barrels of refined products a day.

Imperial Oil Marketing Company

General Offices—Kennedy Bldg., Tulsa, Okla.

GR 558

KANSAS FIELDS

(Continued from Page 46)

rig up for its No. 1, SW cor. NW NW, Section 21-32-21w, Clark County.

In Marion County, Lambe and others' No. 1 Anderson, C SW NW SW,, Section 2-20-3e, was shut down at 2,696 feet.

In Sumner County, the Champlin Refining Co. and others were drilling at 3,400 feet in their No. 1 Hitchcock, C NW NW NE, Section 16-30-1w, and the S. H. E. Oil Co. was setting the 5-inch casing at 2,910 feet in its No. 1 Stout, C SE SE NE, Section 13-31-2e. Collins & Frantz' No. 1 Young, C SE SE NE, Section 33-32-2e, was spudded and shut down. Brady Bros.' No. 1 Turpin, C SW SW SW, Section 13-33-2e, was shut down at 3,370 feet. Dillard Bros. abandoned as dry at 3,502 feet their No. 1 Miller, NE cor. SE, Section 9-33-1e.

Cowley County

In Cowley County, Slick and others were drilling below 2,900 feet in their No. 6 Olson, C NW NE SE, Section 1-35-7e. Waite Phillips' No. 1 Wilson, NE cor. Lot 22, Section 19-34-8e, was dry and abandoned at 2,880 feet. The Emerald Oil Co.'s No. 4 Keithley, SW cor. NW NE, Section 36-32-4e, was drilling ahead below 1,500 feet after showing only 25 bbls. of oil and 40 bbls. of water as a result of a 20-quart shot in sand at 1,490-95 feet. The Arkansas Fuel Co.'s No. 1 Morris, SE cor. 1-32-4e, was a failure at 3,180 feet.

Trees Bros. were drilling their No. 1 Brown, NE cor. SW, Section 6-32-5e, at 2,351 feet with 1,000 feet of oil in the hole from sand at 2,342-51 feet. The Twin State Oil Co. was drilling its No. 1 Hilbert, SE cor. NW, Section 6-32-5e, below 1,800 feet, and Burgess and others had their No. 1 Wray, NW cor. SE, Section 35-30-5e, shut down at 2,150 feet.

Other shut down wells in Cowley County were: O. W. Dickerson's No. 1 Brasher, SE cor. NW, Section 32-31-4e; at 2,825 feet; Boggs and others' No. 1 Geeke, NE cor. NW, Section 25-32-4e, at 2,410 feet; the Watchorn Oil Co. and others' No. 1 Keithley, CNL NW NE NE, Section 36-32-4e, at 2,410 feet; Shawver & Elwell's No. 1 Newton, NE cor. SE NW, Section 15-30-4e, at 2,784 feet; Price & Wentz' No. 4 Martin, CEL NE NW, Section 36-32-4e, at 1,400 feet.

Shawver & Sutter were drilling at 1,100 feet in their No. 1 Newton, NE cor. SW NE, Section 15-30-4e. Torrence & Torrence were also drilling at 1,500 feet in their No. 3 Seaman, SE cor. SW NW, Section 35-32-4.

In Elk County, Roth and others shot their No. 3 Porter, CWL SW, Section 12-29-8, with 160 quarts and it was good for 100 bbls. in sand at 2,061-2,103 feet. Croff and others' No. 1 Burge, SE cor. SW NE, Section 13-30-8, was a 3,000,000-foot gasser from sand at 1,665-72 feet. The Orr Drilling Co. was drilling for gas at 1,100 feet in its No. 2 Meentz, C NW SW, Section 26-29-10, and Mitchell and others were below 2,570 feet in their No. 1 Denton, NE cor. SW, Section 31-29-9.

Roth and others' No. 1 Hanna, NE cor. SW, Section 13-29-8, was a rig and the Southwestern Gas Co. had timbers on the ground for No. 1 Strachan, SW cor. NE, Section 20-30-11. The same company had a machine up to drill for gas in its No. 1 Banford, SE cor. NW, Section 36-30-11.

In Cowley County, Trees Bros. and others located No. 1 Smith, SE cor. NE NW, Section 6-32-5e.

Greenwood County

In Greenwood County, Harwood & Winter were spudding No. 1 Clark, SE cor. SW, Section 12-25-8. The Mid-Kansas Oil & Gas Co.'s No. 2 Ladd, SE cor. SW, Section 19-25-9, which formerly made 200 bbls. from sand at 2,409-71 feet, was shot with 140 quarts, increasing to 350 bbls. on the swab.

Two companies had rigs on the ground for new tests. Miller & Henderson for No. 1 Brotton, SE cor. NW NW, Section 14-24-9, and McGinnis and others for No. 1 Brotton, NE cor. SW NW, and for No. 2 Brotton, SW cor. NE NW, same section. A rig was up for Rogers and others' No. 1 Brotton, SW cor. NW NE, same section.

The Syndicate Oil Co. had timbers on the ground for No. 1 Clopton, SE cor. Section 23-22-10, and Bason and others made a location for No. 1 Robson, NE cor. SW NW, Section 14-24-9. The same interests also located No. 1 Bratton, SW cor. NE NW, Section 14-24-9.

The Orlando Petroleum Co.'s No. 1 Breitkrantz, SW cor. NE SW, Section 4-24-10, was drilling below 4,177 feet. Dansinger and others' No. 1 Baker, NE cor. SE SE, Section 17-26-13, picked up a sand at 1,538 feet showing 250,000 feet of gas, and was shut down waiting for pipe. The Gillespie Oil Co.'s No. 6 Jones, CNL SW, Section 21-23-13, was drilling at 1,550 feet. Duncan and others abandoned their No. 1 Edwards, SW cor. NE SE, Section 23-24-10, as dry at 2,980 feet after encountering a small show of oil at 2,638-45 feet.

Another well was given up as a failure after getting a small show. It was Rodgers and others' No. 2 Leedy, C SE NW, Section 31-22-10, which was abandoned at 2,760 feet. The showing came from sand at 2,585-88 feet. Winters' No. 1 Jackson, SW cor. Section 1-25-8, picked up a sand with some oil at 2,269-70 feet, but was abandoned as dry at 2,325 feet.

In Woodson County, Curtis & Curtis found a show of oil at 1,938 feet in their No. 1 Mosher, SW cor. NW, Section 33-25-14, and shut down for pipe. The line was topped at 1,638 feet.

EAST CENTRAL TEXAS

(Continued from Page 46)

Kellum	7	14,578	18,939	19,450
Total	20	16,335	20,639	21,150
Simms Oil Co.:				
Boyd	2	7,678	....	110
Blumrosen	3	330	320	345
Rose	1	2,600	3,725	3,400
Total	5	10,608	3,945	3,755
R. E. Brooks:				
Cerf	3	3,616	4,092	4,220
Hughes Oil Co.:				
McKie	1	10	710	530
Empire Gas & Fuel Co.:				
Sweatman	1	....	....	640
Garland Kent:				
Fleming	7	3,312	10,220	9,755
Mitchell & Jones:				
Burke	2	460	480	640
New Domain Oil Co.:				
R. F. Kent	5	218	311	390
Sun Oil Co.:				
Kent	4	487	562	410
Witherspoon Oil Co.:				
Burke	9	2,379	2,646	2,720
Mutual Oil Co.:				
Howell	2	5,000	4,380	5,170
Collins & Wheelock:				
G. Kent	2	....	....	420
Elliott & Others:				
Hill	1	977	1,550	2,354
Barclay & Meadows:				
Cerf	1	1,490	1,151	....
Hughes Dev. Co.:				
McKie	13	678	710	530
Parker and Others:				
Cerf	1	700	1,164	1,190
Texas & Brazos Valley R. R. Co.:				
Right of Way.	2	5,302	10,244	13,970
Miscellaneous Cos.:				
Springfield and Christian	10	840	796	1,233
Grand total	532	233,168	288,993	284,893

Late Completions

Following is the list of late wells. Some of them started off very auspiciously but at this time the initial production means little.

Gulf Production Co.'s No. 1 Boyd, Meador survey, bailing liner, total depth 2,988 feet, 100 feet of oil in the hole.

Gulf Production Co.'s No. 16 Crews, Harris survey, sand at 2,917-78 feet, 1,400 bbls.

Simms Oil Co.'s No. 2 Rose, Harris survey, sand at 2,969-76 feet, 2,400 bbls.

Humphreys Oil Co.'s No. 59 McKie, Broyles survey, sand at 2,870-2,920 feet, 175 bbls.

Humphrey Oil Co.'s No. 58 McKie, Broyles survey, sand at 2,848-96 feet, 125 bbls.

E. L. Smith Oil Co.'s No. 10 Keith, Matthews survey, sand at 2,928-64 feet, 1,000 bbls. No. 3 Keith, sand at 2,930-64 feet, 1,000 bbls.

Mutual Oil Co.'s No. 5 Howell, Matthews survey, sand at 2,918-55 feet 2,000 bbls.

Humble Oil & Refining Co.'s No. 7-A Fleming, Greer survey, sand at 2,896-97 feet, dry.

Empire Gas & Fuel Co.'s No. 4 Sweat-

man, Harris survey, sand at 2,986-97 feet, dry.

Garland Kent's No. 2 Fleming, Harris survey, sand at 2,922-50 feet, 350 bbls.; No. 4 Fleming, sand at 2,898-2,950 feet, 450 bbls. No. 8 Fleming, sand at 2,885-2,955 feet, 1,100 bbls.; No. 11 Fleming, sand at 2,905-50 feet, 350 bbls.

Gulf Production Co.'s No. 11 Crews, Harris survey, sand at 2,938-78 feet, 1,000 bbls.; No. 13 Crews, sand at 2,922-76 feet, 129 bbls. the first hour.

Humble Oil & Refining Co.'s No. 3-B Cerf, Smith survey, sand at 2,870-2,970 feet, 750 bbls.

Humble Oil & Refining Co.'s No. 6-A Fleming, Greer survey, sand at 2,918-62 feet, 900 bbls.

Humble Oil & Refining Co.'s No. 9-A Ramsey, Smith survey, sand at 2,928-55 feet, 118 bbls.

Gulf Production Co.'s No. 2 Crews, Harris survey, sand at 2,923-78 feet, 500 bbls. the first 10 hours.

Humble Oil & Refining Co.'s No. 16 Davis, Barry survey, sand at 2,953-70 feet, flowed 120 bbls. and then quit; standing with 1,500 feet of oil in the hole.

Humble Oil & Refining Co.'s No. 8-B Ramsey, Smith survey, sand at 2,895-2,940 feet, 8 bbls. the first hour.

Humble Oil & Refining Co.'s No. 1 E. L. Kent, Matthews survey, sand at 2,970-72 feet, dry; same company's No. 3 Kent, sand at 2,964-83 feet, 10 bbls. the first hour and then quit flowing.

Humble Oil & Refining Co.'s No. 11 Crews, Harris survey, sand at 2,949-92 feet, 600 bbls. a day on the swab.

Garland Kent's No. 6 Fleming, sand at 2,916-58 feet, 350 bbls.; No. 13 Fleming, sand at 2,885-2,952 feet, 350 bbls.; No. 15 Fleming, sand at 2,909-45 feet, 400 bbls.

Yoder and others' No. 1 Harvard, is making 2,000 bbls., 10 per cent b.s.

Tidal-Buttram Oil Co.'s No. 1 Bressie, Bragg survey, sand at 2,960-75 feet, 2,500 bbls.

Mutual Oil Co.'s No. 4 Howell, Matthews survey, sand at 2,910-56 feet, 1,800 bbls.

The Simms Oil Co.'s No. 3 Rose, Harris survey, sand at 2,894-2,978 feet, 1,000 bbls. No. 4 Rose, sand at 2,887-2,978 feet, 1,100 bbls.

Gulf Production Co.'s No. 12 Crews, Harris survey, sand at 2,923-79 feet, 1,500 bbls.

WHEN THE OPERATOR AGAIN HEARS THE CALL

(Continued from Page 34)

real interest in the oil industry other than what they could get out of it.

It would seem that the producers in all fields should give very serious consideration to the matter of drilling campaign to be started when prices are increased for crude oil and the demand is better, and now that there is time to plan and work out problems of production they should consult with each other where offset wells are to be considered and make their drilling operations in such a way that the oil would be produced over the longest possible time period consistent with the actual requirements, not necessarily for the immediate future, but looking forward one, two or even three or more years hence.

Consumption Increasing

Consumption of crude oil products is constantly increasing and oil is one of the resources of this nation that is utterly destroyed when used so that to keep up with the consumption requirements new oil must be brought to the surface.

Conservation of the oil when produced has been carefully considered and there is no reasonable excuse for wasting oil when it is above the ground, and in the refinery the methods of producing the finished products have been improved until the modern, up to date refinery is now using practically everything that is produced and at the same time getting an increased yield in gasoline.

So it would seem that the producer holds within his own control the conditions necessary to maintain a fair and ever increasing price for his product, if he will but realize that the mechanical means of producing oil have been brought to such a state of perfection, and are still being improved, so that if the modern appliances are used to their full extent more oil than can be consumed will be quickly brought to the surface, with its consequent reduction in price and slump in producing activities, and in making his plans for a drilling campaign be governed accordingly, with the result that better prices will be maintained over longer periods and the areas of depression gradually reduced and ultimately practically eliminated altogether.

INITIAL PRODUCTION AT POWELL DECLINES

(Continued from Page 38)

October 17. The other pipe lines made no changes.

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	27	99	0	0
Bradford Field	76	203	4	0
Middle Field	9	24	1	2
Venango-Clarion	24	29	2	3
Butler-Armstrong	14	30	3	2
Southwest Penn.	29	39	5	19
West Virginia	103	381	20	51
Southeastern Ohio	73	738	15	7
Total November	355	1,543	50	84
Total October	351	1,390	41	81
Difference	4	153	9	3

Rigs and Wells Drilling

Fields—	Rigs	Drg.	Ttl.
Allegany	10	16	26
Bradford Field	20	52	72
Middle Field	0	5	5
Venango-Clarion	1	19	20
Butler-Armstrong	13	14	27
Southwest Pennsylvania	15	37	52
West Virginia	88	132	220
Southeast Ohio	34	68	102
Total November	181	343	524
Total October	179	384	562
Difference	2	41	39

More wells were completed in the eastern fields during November than in October while the initial production was somewhat greater. However, there were nine more dry holes finished in November than in October and three more gas wells. The total number of drilling operations showed a loss, there being two more rigs in November than in October but 41 less drilling wells.

NORTH LOUISIANA-SOUTH ARKANSAS

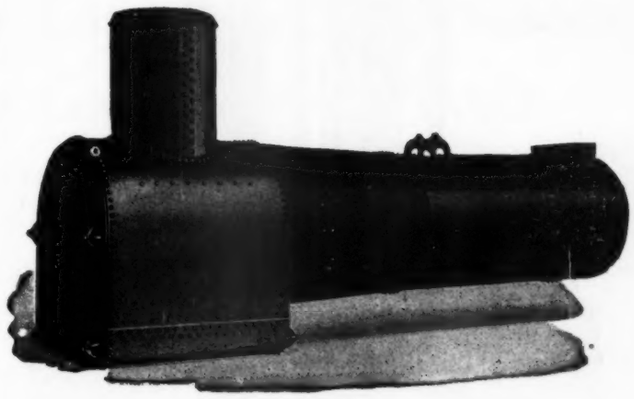
Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Smackover District, Union Co.	48	30,890	12	0	32	54	86
Ouachita Co.	41	8,345	1	0	23	42	65
Stephens Dist., Columbia and Ouachita Counties	15	579	0	0	8	3	11
Bellevue Dist, Bossier Parish	11	135	2	1	3	7	10
Caddo	6	361	1	0	2	5	7
Claiborne	5	128	3	0	1	1	2
De Soto	3	0	3	0	0	0	0
Red River	1	0	1	0	0	4	4
La. wildcats	20	0	3	17	16	38	54
Ark wildcats	2	0	2	0	9	17	26
Total Nov.	152	40,438	29	18	94	171	265
Total Oct.	146	31,320	23	22	107	210	317
Difference	6	9,118	6	4	13	39	52

The most interesting occurrence during the month was the completion of Oil Fields Gas Co.'s No. 1 S. J. Merritt, Section 14-21-10, 35 miles northeast of Shreveport and 14 miles west of the Homer Pool. The well was brought in as a gasser with 25,000,000 feet of gas and spraying sufficient oil to furnish proof of probable oil production in that area. Acreage was sold at high prices and the general belief seems to be that another pool has been located.

New production of importance was confined principally to the Smackover district with the Louann area leading. A considerable gain over the figures of last month is shown by the total of new production for the entire area, for which the Smackover areas are entirely responsible. The Stephens Field, however, made a gain of nearly double the total October production. The belief is quite persistent that Union Parish has demonstrated the existence of a pool through Davidson & Palmer's No. 1 Frost Johnson, which unquestionably

(Continued on Page 122)



KEWANEE

Oil Country Boilers

The same high grade materials and the same excellent workmanship that have made it possible for Kewanee Steel Boilers to be leaders in the field for the past 35 years, go into every Kewanee Oil Country Boiler.

They are constructed of steel, firmly riveted and caulked and are built according to the code for building adopted by the American Society of Mechanical Engineers, which code is now required in the State of Oklahoma. Every Kewanee Boiler will produce all that its rated capacity calls for. You are not experimenting when you use Kewanee but are buying a boiler that has been produced after all of these years of continuous building.

Hundreds of these boilers are and have been in use in the oil fields and have given the owners excellent service.

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

Makers of Steel Boilers, Steel Tanks, Water Heating, Garbage Burners, Tubaseo Water Heaters

Sold by International Supply Co., Tulsa

Good Samples

Bring Worth-While Results

WHEN samples are sent out in clear flint glass Sample Oil Bottles with ground and polished bottoms they are more than merely "offered for sale."

They are given a distinct advantage in the preliminary and comparative color and viscosity tests. Available in the 2-oz., 4-oz. and 8-oz. sizes direct from stock. Please specify whether you desire plain or ground and polished bottoms.

We are also able to supply you from our own Cork Factory with extra-long, high grade, tapered corks to fit your bottles.

Write our nearest Branch. They will be glad to assist you with your bottle problems.

Illinois Glass Company

Alton, Illinois

"Bottles of Every Description"

BRANCH SALES OFFICES

Atlanta, Ga.
Baltimore, Md.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Dallas, Texas
Denver, Colo.
Detroit, Mich.
Kansas City, Mo.
Los Angeles, Calif.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
St. Louis, Mo.
St. Paul, Minn.
San Francisco, Calif.
Seattle, Wash.

NORTH CENTRAL TEXAS

(Continued from Page 44)

and others' No. 2 K. & K., rigging to bail and test a sand at 1,797 feet; Comac Oil Co.'s No. 1 Terhune, drilling at 305 feet; Chappell and others' No. 1 Jackson, drilling at 865 feet; Robinson and others' No. 1 McCaleb, underreaming 6⅝-inch casing at 2,105 feet; Knight and others' No. 1 Potts, drilling in blue shale at 1,805 feet.

Archer County

Completions: Chenault and others' No. 4-C Wilson, 68 bbls. at 1,580 feet; same company's No. 5-D Wilson, 75 bbls. at 1,590 feet; Featherstone and others' No. 2 Wilson, dry at 1,408 feet; Gwynn and others' No. 4 Carter, 125 bbls. at 1,580 feet; Lane and others' No. 1 Parrish 7 bbls. at 1,593 feet; Oil Investment Co.'s No. 2-B Parrish, 50 bbls. at 1,680 feet; Sibley and others' No. 5 Wilmot, 115 bbls. at 1,590 feet; Swastika Oil Co.'s No. 9 Richardson, 50 bbls. at 1,365 feet.

Drilling: The Texas Co.'s No. 8 Carter Bros., showing some oil and drilling in sand at 1,580 feet; No. 9 Carter Bros., drilling sandy shale at 795 feet; Barkley and others' No. 2 Wilson, fishing for casing at 1,405 feet; Bell and others' No. 3 Wilson, shut down on top of an oil sand at 1,600 feet; Bohler and others' No. 2 Wilmot, cleaning out oil sand at 1,595 feet; Boyd and others' No. 1 Mrs. Carter, drilling in brown shale at 1,305 feet; Chenault and others' No. 6-D Wilson, drilling at 305 feet; Clayton and others' No. 2 Richardson, cemented casing and shut down at 1,360 feet; Cranfill and others' No. 1 Wilson, drilling at 1,367 feet; Dale and others' No. 6 Wilmot, testing a sand showing some oil at 1,600 feet; Dilday and others' No. 1 Ferguson, drilling in rock without any showing at 2,100 feet; Dixon and others' No. 1 White, shut down for casing on top of an oil sand at 1,600 feet; Empire Gas & Fuel Co.'s No. 1-B Wilson, shut in on top of an oil sand at 1,400 feet; Featherstone and others' No. 3-B Wilson, bailing and testing a sand showing oil at 1,580 feet; Gatewood and others' No. 1 Boone, drilling in soft rock and mud at 1,755 feet; Grandberry Drilling Co.'s No. 1 Wilson, from a sand at 1,600 feet, pumping 10 bbls. of oil and 100 bbls. of water; Gwynn and others' No. 2-A Mrs. Carter, testing an oil sand at 1,570 feet; Jetter and others' No. 1 Wilson, standardizing on top of an oil sand at 1,590 feet; Johnson and others' No. 1 Wilson drilling at 875 feet; Kentucky Oil Corp. No. 2 Wilson, drilling in brown shale at 1,380 feet; Maer and others' No. 1, Wilson, drilling at 205 feet; Morris and others' No. 1 Wilson, bailing and testing a sand at 1,600 feet; Moore and others' No. 1 Wilson drilling in brown shale at 1,460 feet; Norton and others' No. 1 O'Donnell, running 5⅜-inch casing at 1,275 feet; Pace and others' No. 1 Ford, drilling at 665 feet; Riner and others' No. 2 Wilson, drilling at 380 feet; Sampley and others' No. 1 Miller, drilling in mud at 880 feet; Sibley and others' No. 6 Wilmot, testing an oil sand at 1,590 feet; Sixty-Six Oil Co.'s No. 4 Wilson is a rig; Staley and others' No. 4 Mrs. Carter, cleaning out and will test a sand showing oil at 1,575 feet; Thomas and others' No. 1 Ford, drilling at 705 feet; Sun Oil Co.'s No. 3 Farmer, drilling at 950 feet; Sunshine State Oil & Refining Co.'s No. 11 Carter Bros., drilling at 975 feet; No. 12 Carter Bros., drilling in rock at 1,105 feet; Swastika Oil Co.'s No. 1 Neil, shut down for cable tools at 2,950 feet; Underwood Drilling Co.'s No. 2 Wilmot, testing an oil sand at 1,595 feet; No. 1 Wilson, drilling at 155 feet; Doctor Wallace's No. 16 K. & K., drilling in blue shale at 1,415 feet; Williams and others' No. 1 Wilson, cleaning out at 1,460 feet.

Young County

Completions: Smith and others' No. 1 Benson, 8 bbls. at 995 feet.

Drilling: Bymes and others' No. 1 Mahoney, running 5⅜-inch casing at 3,933 feet; Harrown and others' No. 1 Vick, spudding. McGuire and others' No. 1 Carter, fishing for casing at 1,875 feet; McKenzie and others' No. 1 Logan, drilling at 115 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Gibson, sidereaming with 1,000 feet of oil in the hole at 3,750 feet; No. 1 Moren, drilling at 1,815 feet; Nash and others' No. 1-B Williams, drilling in soft rock at 1,685 feet; North American Refining Co.'s No. 1-B Scott, cleaning out at 3,800 feet; Snowden and others' No. 1 Carter, underreaming 8¼-inch casing at 1,868 feet; Weekly and others' No. 1 McLaren, drilling in soft shale at 2,300 feet; Whitehead and others' No. 1 Graham, drilling at 605 feet; Whitehead and others' No. 1 Johnson, running 6⅝-inch casing at 4,229 feet.

Stephens County

Completions: Dalsa Oil Co.'s No. 1 Beck, 4 bbls. at 1,675 feet; Foster and others' No. 3-C Shipley, 360 bbls. at 3,170 feet; Humble Oil & Refining Co.'s No. 1 Wild, dry at 3,675 feet; Magnolia Petroleum Co.'s No. 2 George, 15 bbls. at 3,630 feet; Scott and others' No. 1 Davis, 310 bbls. at 3,290 feet.

Drilling: Ewing and others' No. 1 Martin, running 6-inch casing at 3,160 feet; Mid-Kansas Oil & Gas Co.'s No. 2 Cougher, fishing for casing at 3,150 feet; McLane and others' No. 1 Hill, drilling in black lime at 3,700 feet; Pierce and others' No. 1 Credington, drilling at 555 feet; Weekly and others' No. 2 Martin has 400 feet of oil in the hole and showing gas from a lime formation at 3,750 feet; Magnolia Petroleum Co.'s No. 4 Brown, has a hole full of water and drilling at 3,355 feet; No. 12 Rush, drilling at 2,785 feet; No. 4 Walker, drilling at 2,665 feet; Mahlstedt and others' No. 1 Boyett, set 6-inch casing and mudded off gas and drilling at 3,000 feet; Owen and others' No. 1 Walker & Caldwell, set 6-inch casing at 3,090 feet; Rosser & Pendleton's No. 5 Jones, drilling at 700 feet; Sinclair Oil & Gas Co.'s No. 5 Henderson, drilling at 400 feet; Texas Pacific Coal & Oil Co.'s No. 3 Ashmore, running 8-inch casing at 1,515 feet; No. 48 Binney, has topped an oil sand and shut down at 1,825 feet; Walker & Caldwell's No. 14 Walker and Caldwell, has 1,200 feet of oil in the hole and shut down at 3.310 feet.

Eastland County

Completions: Magnolia Petroleum Co.'s No. 3-A Rogers, 20 bbls. at 2,835 feet; Panhandle Oil & Refining Co.'s No. 6 Hightower, 30 bbls. at 1,230 feet.

Drilling: Ablon and others' No. 1 Collins, drilling in gray lime at 3,210 feet; Clayton and others' No. 1 Steele, drilling in blue shale at 2,780 feet; Harrell and others' No. 1 Mahan, missed a shallow sand and drilling at 2,950 feet; Humble Oil & Refining Co.'s No. 4 Merrill, drilling at 455 feet; Magnolia Petroleum Co.'s No. 14 Westmoreland, drilling in slate at 2,815 feet; Panhandle Oil & Refining Co.'s No. 5 Webb, drilling at 675 feet; Clayton and others' No. 1 Harwood, drilling at 1,905 feet; No. 1 Rio Bravo, at 3,050 feet; Dougherty and others' No. 1 Johnson, drilling in brown shale at 1,215 feet; Rosenfield and others' No. 1 Brunett, fishing for casing at 2,110 feet; No. 1 Lewis, drilling at 305 feet.

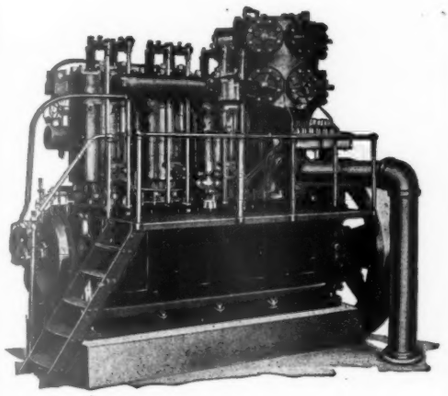
Wildcats

Martin County—Completions: Cox Realization Co.'s No. 1 Walcott, dry at 2,065 feet.

Shackelford County—Drilling: Beggs and others' No. 1 Parrish, running 8-inch casing at 2,110 feet; Humble Oil & Refining Co.'s No. 1 Elliott, drilling at 1,120 feet; No. 1 Jackson, drilling in blue slate at 2,200 feet; No. 13-E Poindexter, drilling at 1,107 feet; Landreth and others' No. 14 Poindexter, hole full of water and drilling at 2,135 feet; Texhoma Oil & Refining Co.'s No. 2 Black, hole full of water and drilling at 2,525 feet.

Palo Pinto County—Drilling: Republic Oil Co.'s No. 1 Stuart, drilling at 2,225 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Robinson, drilling by tools at 3,580 feet; No. 144 Stuart, shot with 10 quarts, showing some oil and cleaning out at 1,607 feet; Thomas and others' No. 1 Thomas, fishing for tools at 3,590

The Reeves Vertical Gas Engine—Compressors For Gas Booster Plants



Engine Sizes:
40 H. P. up to 250 H. P.

Engine-Compressor Sizes:
60 H. P. up to 160 H. P.

A few of the reasons why leading companies and engineers are purchasing the Reeves Gas Engines and Compressors.

They know the Reeves unit is not an experiment, having proven its reliability and worth over a period of about twenty years successful service.

Account of the simplicity of operation; low fuel and maintenance cost per horse power. One user just reported having operated last four units 16 months without shutdown.

All Compressors equipped with "Hope" Biplane, Patented, easy operating, high speed Valves.

Saving in installation time partly pays for unit.

Saving in plant construction cost from 20 to 50%, depending on location.

Branches Pittsburgh, Penna Tulsa, Okla. Casper, Wyo

HOPE ENGINEERING & SUPPLY CO.
Mt. Vernon, Ohio, U.S.A.

Consulting and Contracting Engineers in Natural Gas and Oil

Roots Rotary Pumps

AT THE Petroleum Congress and Exposition, Roots Engineers found a decided interest on the part of refining executives in the decreased pumping costs obtainable with Roots Rotary Pumps.

These savings are now being made in plants known for the efficiency of their refining methods.

Roots Rotary Pumps fill a unique place in refinery operation. Their construction is different, their maintenance is lower, their efficiency has been tested in practice.

Detailed bulletins will be mailed on request.

The P.H.&F.M. ROOTS CO.
DEPT. 18
CONNERSVILLE, IND.

Chicago Office
128 S. Michigan Ave.

New York Office
Room 808-120 Liberty St.

387

TEXACO

REG. U.S. PAT. OFF.

TEXACO

Petroleum Products

HIGH GRADE UNIFORM QUALITY

Naphtha	Gear Lubricants
Gasoline	Axle Greases
Kerosene	Solid Lubricants
Fuel Oils	Wire Rope Lubricants
Bunker Oils	Pale Oils
Diesel Fuels	Red Oils
Signal Oils	Black Oils
Miners Oil	Floor Oils
Gas Oil	Paraffin Oils
Distillates	Wax Oil Stock
Spindle Oils	Waxes
Motor Oils	Oil Soap
Engine Oils	Asphalts
Dynamo Oils	Road Oils
Machine Oils	Asphalt Cement
Cylinder Oils	Pipe Coating
Cylinder Stocks	Roofing
Car Oils	Roofing Paper
Greases	Roofing Cement
Cup Greases	Petroleum Coke
Gear Greases	Metal Polishes

THE TEXAS COMPANY

NEW YORK 17 Battery Place — CHICAGO McCormick Bldg. — HOUSTON The Texas Co. Bldg.

Offices in Principal Cities

Export Dept.: 17 Battery Place, New York City

feet; Costello and others' No. 1 Costello, drilling at 1,680 feet; Jones and others' No. 1 Jones, showing both oil and gas at 1,350 feet; Nelson and others' No. 2 Finch, plugged back from 4,150 feet to a 3,300-foot sand and will shoot. Zada Belle Oil Co.'s No. 1 Weldon, drilling at 3,070 feet.

Mitchell County—Drilling: Carey and others' No. 1 Morrison, a derrick. Fensland Oil Co.'s No. 1 Badgett, will be abandoned around 3,250 feet; Kelsay Oil Co.'s No. 1 Badgett, cleaning out after a shot at 3,120 feet; Sloan and others' No. 1 O'Neil, cleaning out at 3,112 feet; No. 2 Smart, drilling at 785 feet; Underwriters Producing & Refining Co.'s No. 5 Morrison, cleaning out at 3,105 feet.

Baylor County—Drilling: Waggoner and others' No. 1 Portwood, drilling in shale at 1,600 feet.

Clay County—Drilling: Gulf Production Co.'s No. 1-A Boddy, drilling at 2,650 feet; No. 3 Worsham, drilling at 455 feet; Knox & Finley Development Co.'s No. 1 Scott, pumping and testing an oil sand at 1,150 feet.

Cooke County—Drilling: Red River Drilling Co.'s No. 1 Jones, drilling at 1,280 feet.

Montague County—Drilling: Texas Co.'s No. 1-A Gist, showing around 30,000,000 feet of gas at about 900 feet; Amerada Oil Co.'s No. 1-A Beasley, drilling in rock at 3,015 feet; The Texas Co.'s No. 1 Ruckthatchel, is a location; Gulf Production Co.'s No. 1-A Benton, drilling in brown shale at 2,540 feet; Mascho Oil Co.'s No. 1 Powell, drilling at 1,810 feet.

Gray County—Drilling: The Texas Co.'s No. 1 Saunders, set 10-inch casing on top of a lime formation at 1,800 feet and drilling at 1,820 feet.

Holmers and others' No. 1 Morse, underreaming 12½-inch casing at 900 feet.

Armstrong County

Drilling: Magnolia Petroleum Co.'s No. 1 J. A. Ranch, topped a lime formation at 2,768 feet, and drilling in blue shale without any showing at 3,085 feet; Gulf Production Co.'s No. 3-A Burnett, fishing for pipe at 3,145 feet; Mumphreys Oil Co.'s No. 1 Sandford, fishing for one string of tools at 2,530 feet; Silk and others' No. 3 Burnett, rigging up a rotary machine. Tipton, Stone and others' No. 1 McConnell blew control head off and shut down at 3,030 feet; The Texas Co.'s No. 2 Burnett, fishing for a bailer at 3,120 feet; No. 3 Burnett, drilling and straightening a crooked hole at 210 feet.

Collingsworth County—Drilling: Campbell Oil Co.'s No. 1 Stokley, cleaning out at 1,680 feet.

Dallam County: Kellerman and others' No. 1 James, drilling by junk at 1,640 feet.

Hemphill County—Drilling: Finney Oil Co.'s No. 1 Hopkins, drilling in lime shells and shale at 2,715 feet.

Hutchinson County—Drilling: Coline Oil Co.'s No. 1 Sandford, fishing for tools at 3,185 feet; Humphreys Oil Co.'s No. 1 Johnson, fishing for a bit at 2,585 feet; Montgomery and others' No. 1 Johnson, drilling in red shale at 1,765 feet; McGee and others' No. 1 Smith-Capers, trying to pull 6⅝-inch casing at 3,175 feet; Producers & Refiners Oil Co.'s No. 1-B Bivens, underreaming 12½-inch casing at 835 feet.

Potter County—Drilling: Producers and Refiners Oil Co.'s No. 2 Masterson, drilling in brown rock at 2,880 feet; No. 2-A Masterson, underreaming 12½-inch casing at 930 feet.

PRODUCTION REPORT

Week Ending November 29, 1923

Burkburnett	
American Refining Co.	270
Barkley & Meadows	1,955
Humble Oil & Refining Co.	675
Gulf Production Co.	1,775
Magnolia Petroleum Co.	3,710
Middle States Oil Co.	245
McMahon Oil Co.	440
Panhandle Refining Co.	460
Sinclair Oil & Gas Co.	35
The Texas Co.	675
Texhoma Oil & Refining Co.	600
Miscellaneous	12,100
Total	22,940
Electra	
Empire Gas & Fuel Co.	1,660
Humble Oil & Refining Co.	130
Griswold Oil Co.	480
Gulf Production Co.	990
Magnolia Petroleum Co.	5,060
Middle States Oil Co.	125
McMahon Oil Co.	230
The Texas Co.	5,256
Texhoma Oil & Refining Co.	2,450
Miscellaneous	5,675
Total	22,04[illegible]
Iowa Park, Etc.	
American Refining Co.	40
Griswold Oil Co.	35
Gulf Production Co.	65
Texhoma Oil & Refining Co.	40
Miscellaneous	1,990
Archer County—	
American Refining Co.	285
Griswold Oil Co.	525
Gulf Production Co.	390
Humble Oil & Refining Co.	125
The Texas Co.	960
Texhoma Oil & Refining Co.	1,940
Miscellaneous	13,565
Petrolia—	
Gulf Production Co.	95
Magnolia Petroleum Co.	50
The Texas Co.	90
Miscellaneous	185
Total	20,831
Stephens County	
Empire Gas & Fuel Co.	95
Gulf Production Co.	1,615
Humble Oil & Refining Co.	2,140
Magnolia Petroleum Co.	1,045
Mid-Kansas Oil & Gas Co.	1,755
Prairie Oil & Gas Co.	965
Sinclair Oil Co.	315
The Sun Co.	320
The Texas Co.	2,980
T. & P. Coal & Oil Co.	1,255
Miscellaneous	10,430
Total	23,515
Eastland County	
Empire Gas & Fuel Co.	15
Gulf Prod. Co.	645
Humble Oil & Ref. Co.	150
Magnolia Pet. Co.	545
Mid-Kansas Oil & Gas Co.	35
Panhandle Ref. Co.	420
Prairie Oil & Gas Co.	775
Sinclair Oil Co.	460
The Sun Co.	15
T. & P. Coal & Oil Co.	1,005
Miscellaneous	3,790
Total	7,855
Other Fields	
Strawn—	
T. & P. Coal & Oil Co.	250
Miscellaneous	590
Moran—	
Empire Gas & Fuel Co.	175
Humble Oil & Refining Co.	600
The Texas Co.	175
Texhoma Oil & Refining Co.	2,715
Coleman County—	
Miscellaneous	215
Brown County—	
Miscellaneous	625
Comanche-Eastland—	
Humble Oil & Refining Co.	425
Empire Gas & Fuel Co.	15
Magnolia Petroleum Co.	1,275
Mid-Kansas Oil Co.	200
Prairie Oil & Gas Co.	255
Sinclair Oil & Gas Co.	65
The Texas Co.	245
T. & P. Coal & Oil Co.	320
Miscellaneous	3,565
Young County—	
Gulf Production Co.	155
North American Refining Co.	200
Sinclair Oil & Gas Co.	605
Oklahoma Petroleum & Gas Co.	80
Panhandle Refining Co.	370
The Texas Co.	190
Miscellaneous	4,370
Mitchell County	870
Reagan County	150
Jack County	30
Total	19,730
Total all fields	115,475
Total last week	112,255
Gain	3,220

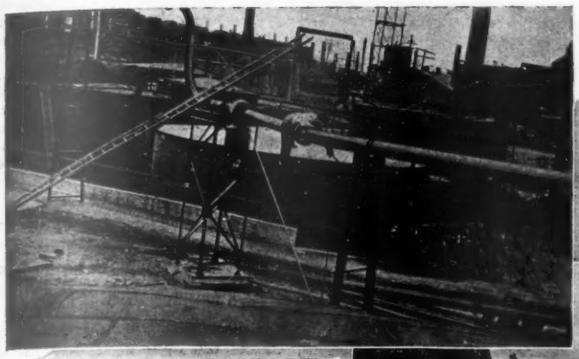
VENEZUELA OIL HERE, FIRST CARGO COMES

NEW YORK, Dec. 3.—The first cargo of crude oil from Venezuela, expected to eventually develop into a field from which large quantities of oil will be sent to this country, has been received here. It was brought by the steamer Sabine Sun, for the Sun Oil Co. and was unloaded at the Marcus Hook refinery of that company. It is expected that these shipments will be made regularly from the Maracaibo Basin.

The Gulf Oil Co. has shipped a large quantity of materials to Venezuela for development of properties recently leased from the Maracaibo Oil Exploration Co. Drilling activities of other companies in the new South American republic are reported to be increasing.

NEW OKLAHOMA GAS SAND

The Magnolia Petroleum Co. has uncovered a new gas sand in the northeast Duncan Field in Section 30-1n-8w, which is making 18,000,000 feet at 2,318 feet. This is the deepest production in its particular territory. It missed the 2,160-foot oil sand.



LEAKS IN YOUR STEAM LINES ARE—

Leaks in Your Profits

A POORLY designed and constructed steam system destroys the efficiency of every bit of mechanism which this system serves. You cannot afford to make mistakes in your steam piping.

Let our years of experience serve you. Complete from design to construction.

Mid-Continent Representative
PAUL GERHARD—307 Kennedy Bldg., Tulsa, Okla.

THE M. W. KELLOGG CO.

140 Cedar St., NEW YORK CITY

REID OIL WELL PUMPING PLANTS

The view at right shows a REID Engine and Band Wheel Power with Belt Tightener, installed in a galvanized iron power house and is typical of many installations of this kind throughout the Oil Country.

JOSEPH REID GAS ENGINE COMPANY, OIL CITY, PENNSYLVANIA, U. S. A.

Branches and Agencies: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Fort Recovery, Ohio; Haynesville, La.; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Calif., Oklahoma, Kansas, Texas, Arkansas and Wyoming; Frick-Reid Supply Co., Tulsa, Okla., and Branches. Branch Shop: Tulsa, Okla.

OKLAHOMA FIELDS

(Continued from Page 42)

2s-3w, was good for 150 bbls. from sands at 2,443-44 feet, 2,448-80 feet and 2,503-08 feet. The Atlantic Petroleum Corp.'s No. 2 Davis, C SE NW NE, Section 25-2s-3w, was making 25,000,000 feet of gas from sand at 1,970-2,008 feet.

The Schermerhorn Oil Co.'s No. 1 Hicks-Palmer, C SW NW NW, Section 5-3s-2w, was flowing 240 bbls. from the sand found at 2,706-40 feet. The test was drilled to a total depth of 2,760 feet. The same company was spudding No. 2-B Davis, C. NW NW NE, Section 25-2s-3w, and was drilling at 300 feet in its No. 7 Airington, C SW NW SW, Section 30-2s-2w.

Schermerhorn Oil Co. and Young's No. 3 Airington, C NW SW SW, Section 30-2s-2w, was a gasser, making 7,200,000 feet from sand at 2,038-49 feet.

A Stephens County test was dry, Ballard and others abandoning their No. 3 Horde, CEL NE NE NE, Section 5-1s-8w, at 2,098 feet. The Calhoma Oil Co. was rigging up a rotary for No. 4 McMahan, CEL SW NE SW, Section 18-1s-8w, and the Magnolia Petroleum Co. was building a rig for No. 2 Maxey, SW cor. SE NE, Section 30-1n-8w.

New Work in Okmulgee

There was some evidence of new work in Okmulgee County. The Enfisco Oil Co. had a machine in place for No. 1 Grayson, CWL SW NE NW, Section 3-15-11, and the Hiram Oil & Gas Co. had a machine for its No. 1, NE cor. SW, same section. The Wolford Oil Co.'s No. 2 Grayson, NW cor. NE SW, same section, was also a machine, and a rig was being erected for J. J. Shock's No. 2 Grayson, SW cor. SE, Section 14-15-11.

Waite Phillips Co. was rigging up an old well, at 2,089 feet, No. 1, SW cor. NW SW, Section 15-15-11. After a 20-quart shot in sand at 2,832-41 feet, Jennings' No. 2 Hill, SW cor. SE NW, Section 23-15-11, was good for 20 bbls., and in the same section, Frank Moore's No. 2 Hill, NW cor. NE NW, became a 150-bbl. producer after a shot of 30 quarts.

John Botts had a rig on the ground for No. 3 Hawkins, SE cor. SW SE, Section 32-15-11, and two other rigs were up, Denton & Marshall's No. 1 Hogan, CEL SE NW, Section 14-15-12, and the Texolean Oil Co.'s No. 2 Williams, CSL SW NW NE, same section. Sheldon & Houston's No. 1 McIntosh, CNL NW SE, Section 33-15-11, was dry and abandoned at 2,909 feet. Another duster was Holliday's No. 1 Shepard, SW cor. NE, Section 22-15-12, which was abandoned at 2,680 feet.

In Tulsa County

In Tulsa County, Ward and others were drilling their No. 1 Roberts, CNL NW NW, Section 2-21-13, at 600 feet. The U. S. Oil & Gas Co. had a couple of wells, No. 9 Charley, SE cor. SW SW, Section 9-21-13, being good for 20 bbls. naturally from the Burgess sand at 1,340-50 feet, and No. 8 Charley, same section, being shut in with 2,000,000 feet of gas from sand at 1,590-1,600 feet. The same company's No. 10 Charley, CEL SW SW SW, same section, was a machine.

A failure was recorded by J. P. Flanagan and others in their No. 1 Tiblow, NW cor. SE, Section 10-21-13, the test being abandoned at 1,750 feet. The Tidal Oil Co.'s No. 10, SW cor. SE, Section 29-21-13, was also given up as dry at 1,760 feet. The U. S. Oil Co.'s No. 1-A Adkinson, NW cor. NE NE, Section 32-21-13, was making 2,000,000 feet of gas in sand at 1,698 to 1,700 feet, and was shut in. It had been plugged back to 1,800 feet from 2,276 feet. The same company's No. 3-A Adkinson, NE cor. SW NE, same section, was also a gasser, being good for 4,000,000 feet from sand at 1,690-1,700 feet.

A 20,000,000-foot gasser was brought in by the Oklahoma Natural Gas Co. in its No. 633, CSL NW NW NW, Section 32-21-12, in sand from 1,621 to 1,630 feet. The Owen-Osage Oil Co.'s No. 3, CSL SE NW SE, Section 10-27-11, made 1,500,000 feet of gas from sand topped at 1,918 feet and drilled to 1,936 feet. The Oklahoma Natural Gas Co.'s No. 630, NW cor. Section 9-20-12, was also a gasser making 1,500,000 feet from sand at 1,579-88 feet.

Abandoned as Dry

The Sand Springs Home abandoned as dry at 2,080 feet its No. 3, CEL NE NE NW, Section 31-20-11, and also classified its No. 8, CEL SE SW NW, same section, as a failure at 1,794 feet. The Home's No. 76, CWL SW SE SE, Section 35-22-8, was drilling at 450 feet.

The Mutual Oil Co. topped the Wilcox sand at 2,690 feet in its No. 2, NW cor. NE, Section 34-23-8, and at 2,736½ feet, it was doing 50 bbls. naturally. It was an old well. The same company was drilling at 600 feet in its No. 22-B, CNL NW SW NE, Section 32-24-8.

In Sections 15, 16 and 22-27-5, 30 wells were shut down at various depths, nearly all of them below 2,000 feet. Eight wells were drilling at less than 1,000 feet in Section 9-27-5, and the Mid-Kansas Oil & Gas Co. was building a rig for No. 4 Rhodes, CNL NE NW SE, same section. The Phillips Petroleum Co. had a rig on the ground for No. 10 Taylor, CSL SE NE NW, same section, and a rig was being built by George S. Bole for his No. 2 Gaston, CEL NE SE NW, Section 4,275.

The Roxana Petroleum Corp. made a location and was moving in a rig for No. 3 Pappan, CWL NW NE NW, Section 4-27-5, and was rigging up No. 2 Pappan, SE cor. NE, same section. The Texas Co. was also rigging up No. 2 Munroe, NW cor. SW, Section 3-27-5.

Tonkawa Area

The Tonkawa area of Kay County was showing a number of signs of life. The Blackwell Oil & Gas Co. was spudding No. 3 Humphreys, NW cor. SW, Section 10-27-1w, at 40 feet, and The Texas Co. was drilling below 2,248 feet in its No. 1 Gillett, SE cor. SW, Section 27-25-1w. The Blackwell Oil & Gas Co.'s No. 7-B Corrigan, CEL SE NE, Section 34-25-1w, was pumping 10 bbls. from sand at 1,805-42 feet.

McCaskey & Wentz were swabbing water from their No. 20 McKee, C NE SE, Section 34-25-1w, from sand at 2,180-95 feet; the same company's No. 22 McKee, CNL NE SW, same section, was shut down at 2,357 feet and No. 42 McKee, C NW SW, same section, was also shut down at 2,545 feet; No. 43 McKee, C SW SW, same section, was drilling by the tools at 2,564 feet, and No. 44 McKee, same location, was drilling by the bailer at 2,230 feet.

The Comar Oil Co.'s No. 4 Clements, CEL SE NW, Section 34-25-1w, was shot with 20 quarts and made 24 bbls. from sand at 2,165-78 feet. The same company's No. 6-A Clements, CSL SW NW, same section, was good for 195 bbls. after a 40-quart shot in sand at 2,530-50 feet.

Other Comar Oil Co. wells in Section 35-25-1w, were as follows: No. 9-A Clements, CWL NW SW NW, was rigging up to drill past the tools at 2,540 feet; No. 12 Clement, CEL SW NW, was drilling at 2,540 feet with 500 feet of oil in the hole from sand topped at 2,503 feet; No. 21-A Clement, C NW NW, was cleaning out without production following a 40-quart shot in sand at 1,998-2,012 feet; No. 28-A Clement, CEL NW NW, was fishing for tools at 2,000 feet; No. 2 Endicott, NW cor. SE, was a 26-bbl. pumper from sand at 1,848-80 feet after an unsuccessful shot of 20 quarts in sand from 1,955 to 1,977 feet. The well was drilled to 2,105 feet and plugged back.

Noble County

Across the line in Noble County, the Comar had five deep fishing jobs. Three of these were on the Blubaugh lease in Section 2-24-1w; No. 8-A, NE cor. SW, was fishing for 5-inch casing at 2,000 feet; No. 10, CSL SE SW, for line at 2,230 feet; No. 21, C SW, for tools at 2,529 feet. No. 8-A Ellsworth, SW cor. NE, same section had also lost the 5-inch at 2,145 feet, and No. 11 Ellsworth, CWL SW NE, was fishing for tools at 2,381 feet. No. 2 Carmichael, NW cor. NE, Section 3-24-1w, was trying to fish out the 5-inch casing at 2,234 feet.

The Comar Oil Co.'s No. 1-A Blubaugh, NW cor. SE, Section 8-24-1w, was underreaming the 5-inch at 2,161 feet and No. 4-C Blubaugh, CNL NW SE, same section, was drilling at 2,507 feet after topping the sand at 2,492 feet. They were rigging up No. 9-C Blubaugh, C SW SE, same section. The same company's No. 12 Ellsworth, CSL SW NE, Section 2-24-1w, was drilling at 2,285 feet, and No. 13 on the same lease, at 1,243 feet.

Comar's No. 24 Carmichael, C SW NE, Section 3-24-1w, was treated with 20 quarts in sand at 2,503-2,600 feet and made 23 bbls. of 43 gravity oil, while No. 24-A, adjoining, was good for only 6 bbls. after a 15-quart shot in sand at 2,080-88 feet. They were cleaning out No. 7-A Ruzek, CNL NE SE, same section, after a shot from 2,042 to 2,070 feet.

The Prairie Oil & Gas Co.'s No. 7-A Novotny, CNL NE NW SE, Section 10-24-1w, picked up the sand at 2,592 feet and was drilling ahead at 2,610 feet without production. The Healdton Oil & Gas Co. was drilling in its No. 8-A Rence, CNL NE NW, Section 11-24-1w, at 2,580 feet, and its No. 11-A Rence, CWL SW NW, same section, was shut down at 2,563 feet, waiting for the cement to set. The same company had a fishing job on its hands at 2,580 feet in No. 12 Rence, C NW NW, same section. The Champlin Refining Co. was pumping 16 bbls. of oil and 18 bbls. of water from No. 1, NE cor. SW, Section 27-24-1w. The sand was from 1,941 to 1,951 feet.

Tonkawa Production

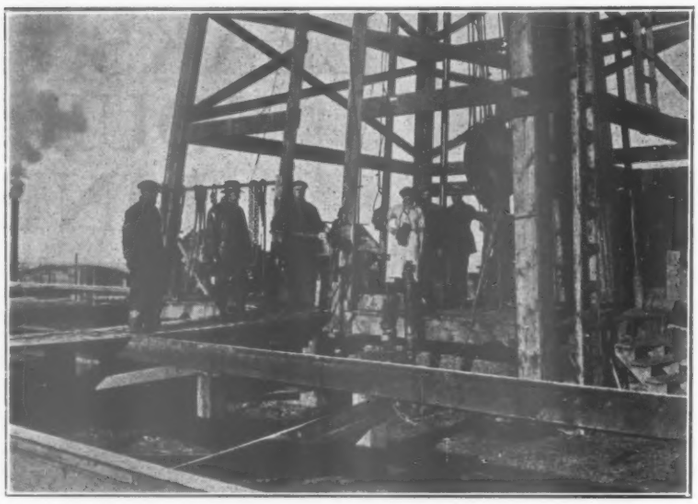
The daily average production of the Tonkawa Field for the week ended November 28 was as follows:

Company—	Wells	Bbls.
Amerada Pet. Corp.	25	2,490
Blackwell Oil & Gas Co.	29	1,691
Carter Oil Co.	6	662
Champlin Refining Co.	4	131
Comar Oil Co.	270	18,896
Cosden Oil & Gas Co. and Maryland Ref. Co.	14	893
Gypsy Oil Co.	79	6,166
Healdton Oil & Gas Co.	18	2,220
McCaskey & Wentz	42	4,585
McMan Oil Co.	2	35
Pennok Oil Co.	26	1,914
Phillips Petroleum Co.	4	283
Prairie Oil & Gas Co.	10	698
Sinclair Oil & Gas Co.	1	73
Slick-Comar Oil Co.	31	2,677
Southwestern Pet. Co.	14	823
The Texas Co.	4	47
White Eagle Ref. Co.	7	734
Total	596	47,749
Total last week	591	47,582
Difference	5	167

Daily average pipe line runs from the field were as follows: Kay County Gas Co., 24,411 bbls.; Ozark Pipe Line Co., 9,401 bbls.; Gulf Pipe Line Co., 7,656 bbls.; Empire Pipe Line Co., 510 bbls.; Champlin Refining Co., 1,380 bbls.; Prairie Pipe Line Co., 826 bbls.; Enid Oil & Pipe Line Co., 271 bbls.; Oklahoma Pipe Line Co., 402 bbls.; Bolene Refining Co., 2,677 bbls. Total, 47,534 bbls.

The amount run to lease storage during the week was 58 bbls.

WESTERN CANADA'S FIRST WELL NEAR RAILROAD



The crew that brought in the first real oil well in east-central Alberta. From left to right: D. O. Credille, driller; Everett Locke, tool pusher; W. W. Kelland, engineer; George Harper, cook; Harry Lewis, tool sharpener; Ed Pudsey, engineer

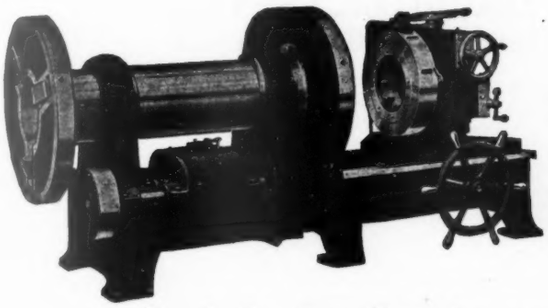
Newton W. Emmens, who as petroleum engineer for the British Petroleums Ltd., of Canada, supervised the work done by the company in the bringing in of the first well to produce crude oil in commercial quantities in western Canada within easy access to a railroad, sent the following statement about the well to The Oil and Gas Journal from Vancouver, B. C.

"The first commercial oil well within easy access of a railroad has been brought in by the British Petroleums, Ltd., of Canada, in east-central Alberta.

"For the past 18 months the British Petroleums, Ltd., of Canada, has been drilling in the Wainwright Field of east-central Alberta and on November 12 completed their second test which resulted in a 100-bbl. producer from a 17-foot sand near the base of the Benton shales at a depth of 2,035 feet. This oil is dark brown in color, of an asphaltic base but of satisfactory quality. The oil is accompanied by sufficient gas to flow it through a 3-inch line. An analysis of the crude oil shows it to contain satisfactory percentages of the gasoline, kerosene and lubrication oil fractions.

"In the No. 1 well this same oil sand was encountered but at that point it was quite thin and did not contain as much oil. At a lower depth in this well a gas sand was encountered which proved to be quite high in gasoline content with a heavy flow of gas. This well is at present closed in but later on it is intended to utilize the gas—from this well and others that will be drilled—for the recovery of its contained gasoline, supplying the town of Wainwright and for the manufacture of carbon black under the regulations recently adopted by the Canadian Government.

"In honor of the head driller on these wells, this oil sand has been named the "Credille" sand. Mr Credille (D. O.) is well known in the California and Texas fields, particularly around Burkburnett."



ALWAYS ON THE JOB

Ready for threading pipe any moment from Monday morning to Saturday night—overtime, too, if needed. Continuous satisfactory service in a machine starts in the designing. There is where every little detail is studied with a view of producing a finished machine that will stand the hard knocks. Every part will sooner or later be called upon to stand right up to hard work. The dies, the die adjusting device, the cut-off, the chucks, the oiling system, should all be dependable. B&K machines have that look of strength and bigness that you like to see in a pipe machine.

FORGE AHEAD WITH A BETTER THREAD

SEND FOR A CATALOG

BIGNALL & KEELER MACHINE WORKS
Edwardsville, Ill.

"Ironcase" and Tin Meters
Metric Orifice Meters

GAS MEASUREMENT

Westcott Differential Gauges
Westcott Proportional Meters

For Accurate — Constant — Economical Work

Measure With Metric

WESTCOTT & GREIS
TULSA DALLAS CASPER
Gas Measurement and Control

METRIC METAL WORKS
of AMERICAN METER COMPANY, Inc.
ERIE, PA.

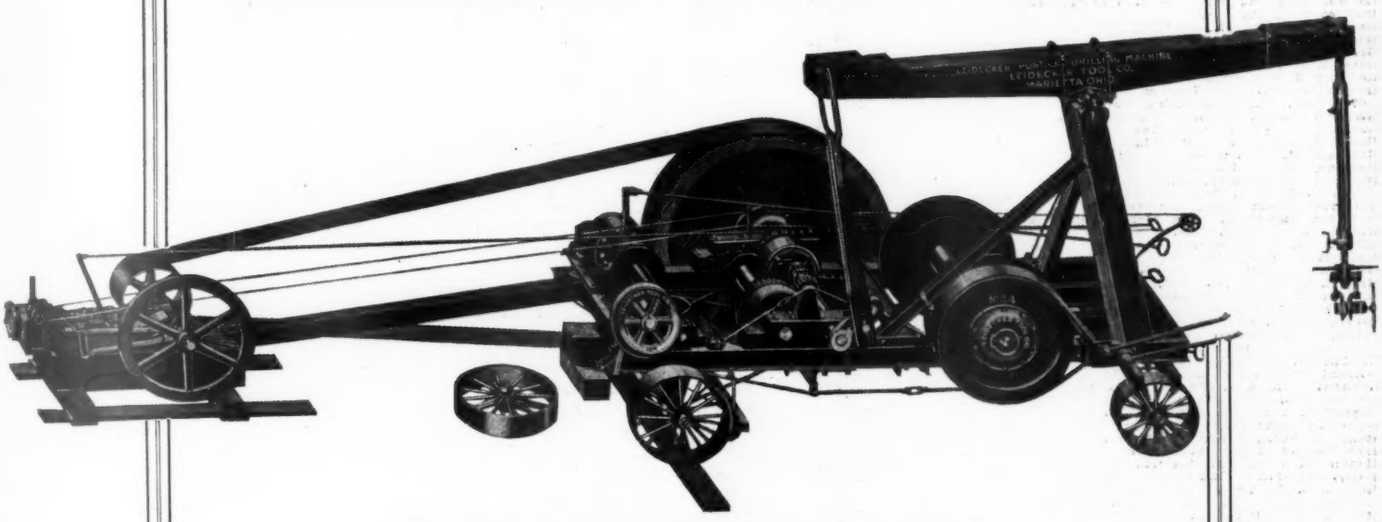
Texas Production Shows Large Decrease

Gross Output of Third Quarter 2,000,000 Bbls. Less Than During Second Period While Value Is $16,000,000 Lower

The curtailment of operations throughout all the fields of Texas, except Powell, during July, August and September, is reflected in the report of the gross production of crude for the third quarter of this year, which shows a decrease of 2,003,598 bbls. as compared to the output for the second quarter. The value of the production showed a drop of $16,060,926.89, declining to $31,537,796 as compared to $47,598,722.89 for the second quarter. The figures for the third quarter of this year as received from State Comptroller's office at Austin, Texas, follow:

Name and Address—	Bbls.	Value
Acorn Oil Co., Beaumont, Tex.	7,479.78	$ 8,821.36
Ada Belle Oil Co., Batson, Tex.	13,525.20	15,028.24
American Ref. Co., Wichita Falls, Tex.	88,266.11	156,386.27
Arkansas Nat. Gas Co., Pittsburgh, Pa.	17,440.26	20,030.62
Adams & Oldham, Beaumont, Tex.	932.49	1,125.78
Arkmo Oil Co., Somerset, Tex.	3,507.26	3,675.22
Associated Oil Co., San Francisco, Calif.	3,101.73	5,293.56
Amicable Life Ins. Co., Waco, Tex.	594	1,541.40
Aztec Petroleum Co., San Antonio, Tex.	797.04	499.00
American Consolidated Oil Co., Oklahoma City, Okla.	510.04	722.47
Adams Bros. & Prince, Ardmore, Okla.	310.14	543.52
Agate, A. L. Receiver, Eastland, Tex.	362.62	977.87
All-American Oil & Gas Co., Oklahoma City, Okla.	253.41	485.23
Ashe, The, Syndicate, Fort Worth, Tex.	694.68	1,250.43
Andrews Petroleum Corp., New York City	12,828	7,551.94
Adams Oil Co., Wichita Falls, Tex.	2,307.72	3,332.03
American Texas Oil Co., Somerset, Tex.	661.39	760.82
Appleman, H., Tulsa, Okla.	186.98	315.46
Associated Oil Co. of Texas, Wichita Falls, Tex.	3,962.08	7,402.68
Apple & Bramdeberry, Wichita Falls, Tex.	16,390.05	27,916.05
Alamo Oil Corp., Wichita Falls, Tex.	595.94	768.33
Aarenson, M. L., Tulsa, Okla.	1,061.86	1,574.63
Alice Oil Co., Fort Worth, Tex.	144.32	215.31
Associated Petroleum Co., Inc., Fort Worth, Tex.	24,317.16	43,265.29
Arlington Oil & Gas Co., Arlington, Tex.	165.76	264.71
Arnold, M. J., San Antonio, Tex.	545.60	612.01
Atlantic Oil Producing Co., Dallas, Tex.	805,012.13	812,100.50
Amster, N. L., Ardmore, Okla.	6,521.34	6,521.34
A. B. C. Oil Co., Electra, Tex.	2,593.66	5,051.28
Barrington, A. L., Brownwood, Tex.	269.30	269.30
Bashara, George F., Waco, Tex.	608	729.60
Bernstein, Ell D., Oklahoma City, Okla.	652.39	1,319.97
Bexata Oil Co., San Antonio, Tex.	3,983.60	6,532.86
Big 4 Con. Oil Co., El Paso, Tex.	589.47	1,042.17
Brown, G. W. & Co., Humble, Tex.	500.59	534.95
Baker Oil Co., Inc., Houston, Tex.	7,712.90	8,453.10
Breman, A. J., Cisco, Tex.	1,765.91	2,410.44
Brock Lundy, The, Oil Co., Bowie, Tex.	109.26	81.25
Brown, Dr. E. W. Est., Orange, Tex.	3,827.29	6,081.05
Brown, Mrs. Carris L., Orange, Tex.	65,621.29	81,089.22
Burk-Venus Oil Co., Dallas, Tex.	646.72	1,129.51
Burr, J. K., San Antonio, Tex.	805.70	1,037.77
Baldwin, F. C., et al, Fort Worth, Tex.	23,592.58	49,976.53
Barkley & Meadows, Wichita Falls, Tex.	138,810.68	212,938.12
Brownwood, Prod. & Ref. Co., Brownwood, Tex.	6,087.21	8,928.10
Blair, M. W., Wichita Falls, Tex.	162.54	260.06
Burkett Lease by Frank A. Reynolds, Eastland, Tex.	1,295.88	2,450.83
Bryan Oil Corp., Wichita Falls, Tex.	5,674.26	12,029.43
Bluebonnet Oil Co., Wichita Falls, Tex.	3,151.32	6,668.96
Browning & McClure, Wichita Falls, Tex.	1,473.66	3,248.85
Bloomerson, Abe, Tulsa, Okla.	13,848.61	14,322.23
Burley Oil Co., Humble, Tex.	5,641.00	6,430.74
Big Pool Oil Co., Wichita Falls, Tex.	741.87	1,244.04
Bleakley & Kinnison, Wichita Falls, Tex.	2,087.72	2,605.78
Blue Bonnett Pet. Corp., Somerset, Tex.	2,732.43	3,032.63
Badger Texas Oil & Ref. Co., West Allis, Wis.	81.02	149.89
Bartlett, Wm. Co., Electra, Tex.	585.90	944.15
Black Panther Pet. Co., Laredo, Tex.	7,542.25	4,824.59
Buckeye, The, Dev. Co., Columbus, Ohio	1,107.19	1,799.69
Buffalo Texas Oil Co., Buffalo, N. Y.	2,611.26	4,668.15
Baggett-House Oil Co., Cameron, Tex.	2,500.32	6,182.60
Barkley, T. G., Sour Lake, Tex.	2,184	2,331.00
Basham, C. E., Wichita Falls, Tex.	382.56	688.61
Bell Burk Oil Co., Waco, Tex.	886.17	1,828.71
Biel, Wm. A., Van Army, Tex.	56	64.80
Bowers Oil Co., Palestine, Tex.	439.55	439.56
Bripkley Prod. & Ref. Co., Pittsburgh, Pa.	2,243.8	3,670.86
Bruce, H., Wichita Falls, Tex.	3,277.67	5,824.37
Bass & Dillard, Wichita Falls, Tex.	8,932.70	15,557.28
Brothers Oil Co., Inc., Tulsa, Okla.	52,728.97	53,097.79
Benton, Mrs. G. Y., Houston, Tex.	446.88	446.88
Biggs Oil & Gas Co., McKinney, Tex.	759	1,776.79
Biggs Oil & Gas Co., McKinney, Tex.	518	1,095.51
Black Cat Oil Co. and J. A. Moore Leases, Electra, Tex.	4,348.84	7,264.92
Bobo, W. T., Eastland, Tex.	4,165.00	6,552.26
Brown, Geo. I., San Antonio, Tex.	3,769.12	6,136.05
Burk Burnett, Jr., Oil Co., Fort Worth, Tex.	686.14	997.59
Bay Oil & Gas Co., Mirando City, Tex.	11,865.44	8,318.63
Bridwell, J. S., Wichita Falls, Tex.	16,700.28	30,728.51
Bridwell & Heydrick, Trustee, Wichita Falls, Tex.	14,234.68	17,081.61
Burkburnett Pro. Trust, Wichita Falls, Tex.	4,219.97	5,067.12
Bridwell, J. S., Wichita Falls, Tex.	2,959.52	2,959.52
Backhus, Clarence R., Fort Worth, Tex.	534.48	582.51
Barkley & Crotty, Ranger, Tex.	21,503.12	43,797.45
Brown & Co., Inc., Breckenridge, Tex.	18,196.73	29,620.75
Barnes Production and C. R. Julian, Graham, Tex.	726.74	1,041.92
Boller, C. W., Wichita Falls, Tex.	3,477.02	4,855.11
Bynum, W. W., Minerva, Tex.	627.34	693.81
Buttram Petroleum Co., Oklahoma City, Okla.	288,921.00	288,921.00
Benson, W. L., & Co. and Empire Gas & Fuel Co., Robinson, Ill.	2,217.72	3,380.20
Boyd, J. F., Iowa Park, Tex.	1,838.81	2,650.67
Bowles, D. T., Moran, Tex.	6,304.76	10,576.38
Bright, Samuel, Wichita Falls, Tex.	1,880.67	3,961.86
Borealis Oil Co., Oklahoma City, Okla.	2,914.84	6,208.60
Bradley Oil Co., Wichita Falls, Tex.	122,544.98	125,337.41
Bailey, Harry F., Sipe Springs, Tex.	1,618.38	2,772.45
Barnhart & Easton, Wichita Falls, Tex.	6,230.80	10,869.67
Beggs, Geo. Strip, Fort Worth, Tex.	9,192.71	18,921.40
Benson Oldham Oil Co., Olney, Tex.	115.73	117.30
Benson Oldham Oil Co., Olney, Tex.	235.78	304.17
Bonchil Company, The, Wichita Falls, Tex.	4,798.45	8,569.27
Bowles, D. T., Moran, Tex.	6,304.76	10,576.38
Big 5 Oil Co., The, Cisco, Tex.	1,281	1,921.50
Barrington, A. L., Agent J. H. Botcher, Brownwood, Tex.	466.4	582.98
Buckeye Petroleum Co., Wichita Falls, Tex.	346.07	622.48
Bliss & Wetherbee, Shreveport, La.	13,095.75	29,326.78
Clara Oil Co., Fort Worth, Tex.	838.98	1,672.30
Christine Bros., Wichita Falls, Tex.	8,138.84	14,302.12
Cornucopia Oil Co., Fort Worth, Tex.	5,243.08	9,675.01
Crowell, L. R., Dallas, Tex.	336.74	704.48
Camp, The, Oil & Gas. Co., Fort Worth, Tex.	19,399.55	39,645.82
Comet Pet. Co., Fort Worth, Tex.	53,515.34	98,200.65
Connellee Oil Co., Eastland, Tex.	202	434.31
Chenault & Lee, Wichita Falls, Tex.	35,687.04	64,656.84
Clark, R. R., Wichita Falls, Tex.	10,606.96	18,166.14
Cline Oil Co., Wichita Falls, Tex.	7,771.25	12,822.56
Sinclair Oil & Gas Co., Houston, Tex.	157,442.55	189,503.75
Cosa Oil Co., Cisco, Tex.	2,614.28	5,942.22
Carteret Oil Co., Fort Worth, Tex.	4,645.09	9,236.93
Coyle-Concord Oil Co., The, Rockdale, Tex.	9,308.85	10,542.53
Crude Oil Dev. Co., Cisco, Tex.	1,134	1,945.00
Crown Oil & Ref. Co., Houston, Tex.	42,305.33	51,432.61
Caltex Oil Co., Spokane, Wash.	1,001.87	1,101.73
Conner Son & Cloughley, Wichita Falls, Tex.	11,320.17	21,795.61
Cardezone Oil Co., Dallas, Tex.	1,879.39	3,348.31
Carter, Roy I., Wichita Falls, Tex.	22,582.10	36,046.21
Chapman, P. A., Jr., Eastland, Tex.	3,274.80	4,788.71
Colmo Oil Co., The, Graham, Tex.	1,322.84	2,909.01
Casoday Oil Corp., H. H. Patton, Trustee, Fort Worth, Tex.	3,932.75	6,979.10
Corts, The W. F., Drilling Co., Columbus, Ohio	126.13	182.99
Chesapeake Oil & Gas Co., Baltimore, Md.	2,042.52	4,196.46
Caynon, The, Oil & Gas Co., Cross Plains, Tex.	4,348.26	9,237.30
Colcord, Sidney, Oklahoma City, Okla.	172.01	247.42
Cotton Oil Co., Saratoga, Tex.	1,495.18	1,681.33
Crystal, The, Oil Corp., Chicago, Ill.	3,991.26	7,874.25
Christi, George, Sipe Springs, Tex.	543.09	805.24
Cotton, J. H., & Co., Iowa Park, Tex.	1,953.88	3,378.31
Cremer & Martin, San Diego, Calif.	400.58	560.81
Cintex Petroleum Synd., Laredo, Tex.	854.75	569.74
Corsicana Oil & Ref. Co., Corsicana, Tex.	5,349.99	2,746.37
Critechaw, W. S., Ardmore, Okla.	35.76	48.43
Cohen, Aaron, Wichita Falls, Tex.	9,811.98	18,084.79
Cohen & Lebow, Trust, Wichita Falls, Tex.	1,011.73	1,658.81
Cline, W. D., Wichita Falls, Tex.	722.80	1,214.06
Caruthers Company, San Antonio, Tex.	2,870.37	3,133.81
Chapman, P. A., Waxahachie, Tex.	373,235.61	344,928.01
Clark, C. H., Wichita Falls, Tex.	4,746.27	6,407.45
C. Y. T. Oil Co., Beaumont, Tex.	582.23	634.61
Calloway, Earl, Pet. Co., Jersey City, N. J.	5,446.51	8,942.89
Corridon, Tom, Jr., Iowa Park, Tex.	1,838.81	2,650.67
Cosden Oil & Gas Co., Tulsa, Okla.	58,756.95	86,906.43
Chamness Loofbourrow Oil Co., Moran, Tex.	1,402.91	2,803.81
Cunningham, P. W., Burkburnett, Tex.	144	244.80
Chenault, N. B., Wichita Falls, Tex.	1,348.20	2,049.12
Clem Oil Co., Houston, Tex.	757.29	810.64
Conley, Delaney Dyer Bros., Ranger, Tex.	2,872.24	5,333.41
Crosbie, J. E., Liberty Oil & Gas Co. and J. W. Gilliland, Dennison Lease, Tulsa, Okla.	403.99	611.57
Carnahan Prod. & Ref. Co., Canton, Ohio	47,078.84	41,286.14
Champlin & Winkler, Holdenville, Okla.	366.30	703.21
Cheney & Anzac Oil Corp., Graham, Tex.	4,585.90	9,778.62
Caldwell Oil Co., Gonzales, Tex.	46,318.60	20,834.37
Carter Farm Oil Co., Wichita Falls, Tex.	12,144.22	15,506.55
Central Texas Oil & Gas Assn., De Leon, Tex.	3,107.96	4,695.88
Crosbie, T. S., San Antonio, Tex.	4,918.42	8,813.41
Daniel, S. B., Wichita Falls, Tex.	1,718.97	3,959.67
Dayton Oil Co., Dayton, Tex.	99.81	137.24
Deep Sands, The, Oil & Gas Co., Corsicana, Tex.	225	225.00
Delta Oil Co., Wichita Falls, Tex.	6,667.14	16,662.43
Dale-Knotts, Oil Co., Wichita Falls, Tex.	504.50	778.59
Dallas-Bradford Oil Co., Dallas, Tex.	636.35	912.82
Dickey Oil Co., Putnam, Tex.	462.58	802.19
Daje, J. E., et al, Wichita Falls, Tex.	30,474.82	46,581.86
Dulaney, H. B., Brownwood, Tex.	1,775.95	2,319.51
Danville Oil & Gas Co., Somerset, Tex.	501.94	611.89
Davis, L. R., Tulsa, Okla.	275.65	311.31
Deutser, B., Trustee, Beaumont, Tex.	667.29	704.65
Duncan, W. C., Wichita Falls, Tex.	1,117	1,638.67
Dayar Bros., Ranger, Tex.	1,983.75	3,465.39
Developers Oil & Gas Co., Wichita Falls, Tex.	1,137.78	2,144.39
Duquesne Oil Co., Eastland, Tex.	8,034.62	14,956.92
Davis, Thomas, Somerset, Tex.	433.87	1,633.82
Dorothy Oil Co., Eastland, Tex.	2,068.25	2,895.55
Dyer, W. H., Graham, Tex.	6,519.24	10,671.90
Darby Pet. Corp., Tulsa, Okla.	1,926.81	1,873.23
Devine & Ramsey, Breckenridge, Tex.	982.50	1,953.37
Dillon-Glasscock Co., San Antonio, Tex.	876.33	1,312.96
Duncan, Dillon & Smith, Wichita Falls, Tex.	140.97	225.55
Danciger, Joe & M. O., Wichita Falls, Tex.	23,629.90	27,358.31
Dale-Special Well, Electra, Tex.	166.54	284.57
Donovan, Heydrick & Allen, Wichita Falls, Tex.	1,512.88	2,656.20
Dale, E. A., Trustee, Electra, Tex.	46.14	55.09
Du Bois, E. B., Dallas, Tex.	546.48	268.64
Dugot, B. P., Sour Lake, Tex.	747	1,139.29
Dunnigan & Hermann, Breckenridge, Tex.	3,188.11	3,937.13
Donnelly, A. M., et al, Fort Worth, Tex.	41,153.75	75,941.59
East Batson Oil Co., Batson, Tex.	10,527.88	13,153.55
Ellis & Anderson, San Antonio, Tex.	318	305.69
Eagle Creek Oil Co., San Francisco, Calif.	3,204.39	4,233.25
Export Refining Co., Fort Worth, Tex.	434.74	662.30
Evans Oil Co., San Antonio, Tex.	8,577.69	4,288.84
Eagle Petroleum Co., Houston, Tex.	148.44	182.25
El Paso Burkburnett Oil Co., El Paso, Tex.	331.52	670.33
Erickson, Davis, Wichita Falls, Tex.	439.22	643.67
Evangeline Pet. Co., Wichita Falls, Tex.	7,314.89	14,535.79
Electra Gulf Oil Co., Electra, Tex.	75,608.28	132,003.60
Empire Gas & Fuel Co., Bartlesville, Okla.	93,306.30	142,261.97
Eggers, J. E., San Antonio, Tex.	2,816.62	3,195.65
Elmore Oil & Gas Trust, Wichita Falls, Tex.	7,736.91	15,498.32
Equity Oil & Ref. Co., Electra, Tex.	14,001.02	21,701.59
Easton, E. S., Wichita Falls, Tex.	374.32	686.59
Eby, Webb T., et al, Eastland, Tex.	1,641.23	2,985.27
Edgerly Petroleum Co., Orange, Tex.	105,609.23	125,917.97
Elliott & Chandler, Moran, Tex.	10,133.40	16,527.71
Erie Investments, Ltd., of Texas, Rockdale, Tex.	1,027.42	1,294.35
Economy Oil Co., The, Fort Worth, Tex.	183.11	163.79
El Dorado Oil & Gas Co., Ranger, Tex.	7,082.77	13,148.39
Eastland Oil Co., Fort Worth, Tex.	18,351.71	36,392.42
Esperanza Oil Co., Laredo, Tex.	7,821,462	4,911.67
Finley, D. T., et al, J. E. Willis, Receiver, Fort Worth, Tex.	300.02	445.84
Fensland Oil Co. of Texas, Fort Worth, Tex.	36,079.51	58,266.13
Fisher & Gilliland, Wichita Falls, Tex.	5,511.46	9,961.57
Fuller & Daniel, Wichita Falls, Tex.	6,875.86	15,988.55
Farbar, J. M., Houston, Tex.	53,424.14	77,684.39
Farish-Watts-Collins, Inc., et al, Houston, Tex.	11,732.07	8,290.61
Federal, The, Oil Co. of Texas, Cleveland, Ohio	1,115.03	1,736.29
Fisher Gates & Co., Wichita Falls, Tex.	56.84	79.59
Frontier Oil Co., San Antonio, Tex.	18,127.91	21,210.87
Fogle Oil Co., Cameron, Tex.	1,883.52	2,112.62
Freedman, Alex, Corsicana, Tex.	59.36	59.36
Farmer, Robt. F., Wichita Falls, Tex.	44.48	58.98
Forty-One Oil Co., The, Wichita Falls, Tex.	5,713.91	10,922.10
Fort Ring Oil & Gas Co., Fort Worth, Tex.	6,225.10	9,571.42
Freeman-Hampton Oil Corp., Wichita Falls, Tex.	19,633.75	30,979.69
Fischer Oil Co., Wichita Falls, Tex.	393.85	661.72
Fresno Oil Co., Wichita Falls, Tex.	13,863.29	27,056.39
Four States Oil Co., Dallas, Tex.	1,286.59	2,514.07
Foster, H. V., Bartlesville, Okla.	1,290.20	2,235.39
Franchot, D. W., & Co., Tulsa, Okla.	780.98	1,492.79
Farish & Ireland Lease, Houston, Tex.	13,439.51	16,400.33
Five Rivers Oil & Gas Co., Wichita Falls, Tex.	1,663.82	2,811.35
Fuchs, Fritz, Taylor, Tex.	2,841	3,380.79
Fox & Lamb Drilling Co., Brownwood, Tex.	3,431.35	5,766.62
Ferguson & Watson, Wichita Falls, Tex.	2,595.84	5,264.32

LEIDECKER 3000-FOOT DRILLING MACHINE WITH CALF WHEEL



We manufacture Machines for drilling any depth from 500 feet to 3500 feet.

Catalog sent upon request.

THE LEIDECKER TOOL COMPANY, Marietta, Ohio
Branch Stores and Shops: Bartlesville, Okla.; Basin, Wyo.; Casper, Wyo.

Why Not Write
"BERT" CHILDS
Humble Bldg., Houston, Texas,

for complete information on this superior Rotary

or make inquiry of any driller who is using a Boykin "Greyhound."

Boykin Machinery and Supply Company
Houston Beaumont Corsicana Shreveport

THE BOYKIN "GREYHOUND" PIPE SCREWING ROTARY

—Equipped with the Lewis-Lincoln Spring Make-Up Post, a patented "Greyhound" feature.

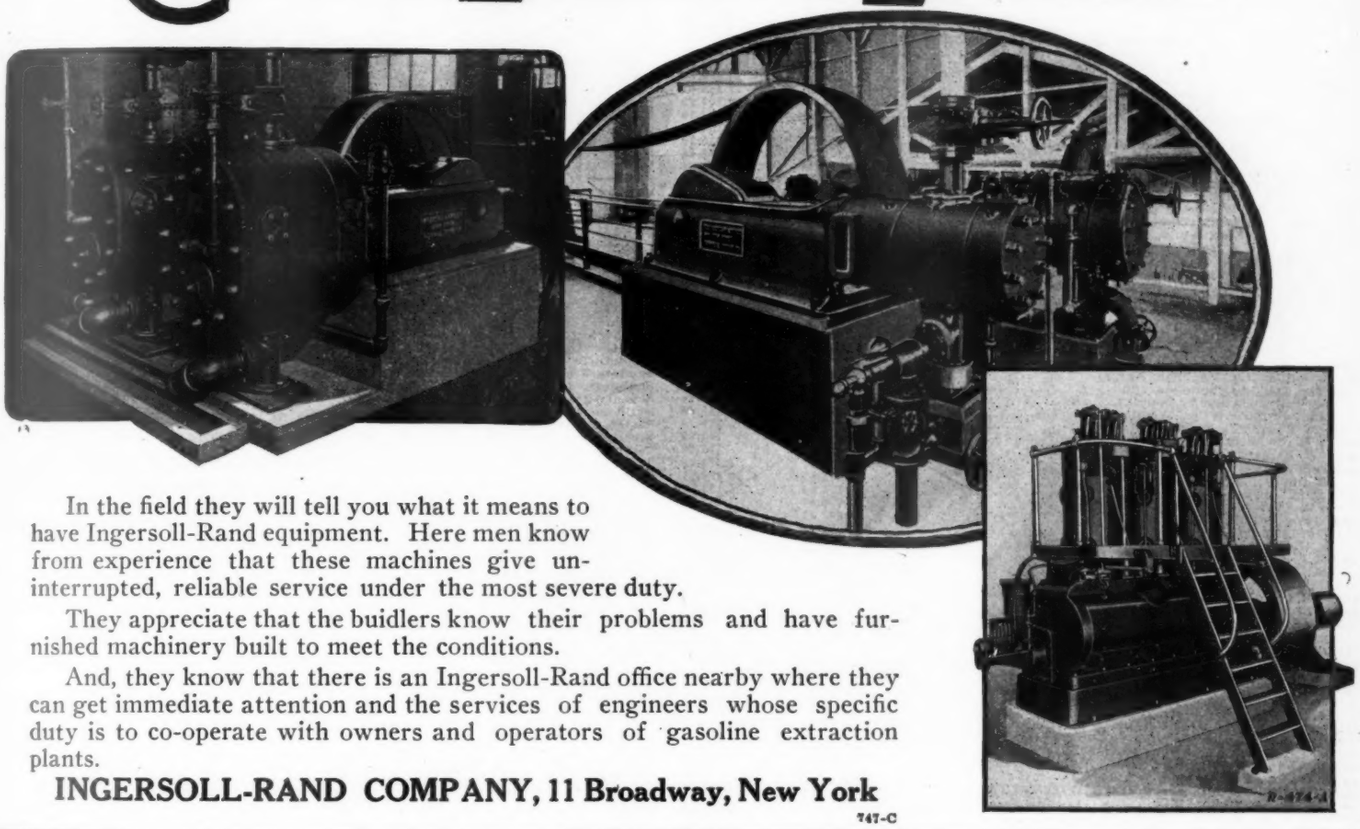
—The Rotary that has proven that casing, drill pipe and tool joints can be screwed up and unscrewed without burning the threads.

SAVES 35% TIME—65% LABOR

—When going in the hole with drill stem, setting casing or on fishing jobs.

Foster & Watson, Wichita Falls, Tex.	2,412.42	4,469.51
Ferguson & Allen, Wichita Falls, Tex.	454.83	818.88
Foster, Fred B., & Co., Los Angeles, Calif.	19,143.80	35,599.25
Fowler, J. G., & Co., Wichita Falls, Tex.	260.04	501.87
Golden Cycle Oil Co., Dalhart, Tex.	298.78	567.78
Graves Bros., Corsicana, Tex.	357.70	317.53
Galena-Signal Oil Co., Houston, Tex.	173,646.95	193,038.24
Gulf Production Co., Houston, Tex.	3,293,161.54	4,569,434.20
Galvez Oil Corp., New York, N. Y.	6,682.34	10,116.17
Garrett, W. T., Eastland, Tex.	600.61	987.07
Glenridge Oil Corp., Breckenridge, Tex.	7,654.94	13,571.09
Gutzler & Cottingham, Indianapolis, Ind.	126.30	210.72
Godley Oil & Gas Co., Henryetta, Tex.	25,888.63	39,374.45
Gholson, Moorman, Dorsey et al, Ranger, Tex.	5,048.23	9,289.96
Godfrey, F. L., Enid, Okla.	193.30	381.63
Granite Oil & Gas Co., Montrose, Colo.	507.38	895.28
Galconda Oil Co. No. 1, Wichita Falls, Tex.	386.12	674.96
Glass, H. B. & Otto, Minerva, Tex.	2,252.46	2,572.00
Glass, A. F. & E. J., Rosebud, Tex.	1,663.78	1,779.04
Goldman, M. S., Colorado, Tex.	5,483.84	2,922.77
Grand Duke Prod. Co., Houston, Tex.	397.58	778.67
Gultex Prod. Co., Waxahachie, Tex.	3,973.80	5,761.45
Gohlke & Gerard, Wichita Falls, Tex.	50.38	73.05
Gates, F. M., Wichita Falls, Tex.	1,115.36	1,920.05
Gladys Belle Oil Co., Tulsa, Okla.	15,755.30	12,688.25
Glasscock, M. E., San Antonio, Tex.	855.04	1,391.66
Grayburg Oil Co., San Antonio, Tex.	285,819.81	209,707.92
Gates Oil Co., Ardmore, Okla.	3,820.77	7,895.62
Gillett, W. D., et al, Cross Cut, Tex.	1,403.90	2,957.83
Glasscock Leasing Synd., San Antonio, Tex.	5,994.55	7,894.83
Grubstake Investment Assn., San Antonio, Tex.	3,086	1,388.70
Grayce Oil Co., Tulsa, Okla.	20,541.07	39,055.61
Gilbert, The, Co., Beaumont, Tex.	6,307.88	7,494.92
Goldeline Oil Corp., Oklahoma City, Okla.	44,449.83	44,449.83
Griswold Oil Corp., Wichita Falls, Tex.	99,940.45	137,104.01
Graham, H. L., Wichita Falls, Tex.	2,037.78	3,054.30
Gallagher & Lawson, Desdemona, Tex.	1,139.72	1,609.56
Gutzler, W. F., Wichita Falls, Tex.	375.46	634.62
Gwynn, P. F., Iowa Park, Tex.	1,838.81	2,650 67
Gwynn, P. F., Trustee, Iowa Park, Tex.	33.20	46.48
Gulf Coast Oil Corp., Houston, Tex.	32,697.48	39,239.83
Gilliland Oil Co., Tulsa, Okla.	2,806.09	6,008.70
Goiconda Oil Co., Wichita Falls, Tex.	3,435.95	5,286.86
Gilchrist, C. H., et al, Wichita Falls, Tex.	3,793.05	6,478.42
Goolsbee & Graham, Wichita Falls, Tex.	726.19	1,307.12
Higgins Oil & Fuel Co., Houston, Tex.	65,880.50	73,523.28
Hooks-Marshburn Synd., Beaumont, Tex.	3,876.13	3,876.13
Hunter & Young, Wichita Falls, Tex.	212.52	281.52
Hyde Production Co., Houston, Tex.	46,011.31	63,527.71
Humble Oil & Ref. Co., Houston, Tex.	5,243,749.38	5,769,871.25
Hefley, McIntosh & Thomas, Cameron, Tex.	1,805.51	2,033.18
Hibbard, E. R., Los Angeles, Calif.	530	941.83
Hoo Hoo Oil Co., Blk. 24, Burkburnett, Tex.	365	664.41
Hub Oil Co., Dallas, Tex.	1,220.37	2,657.27
Hamilton Oil Corp., Denver, Colo.	121,322.67	139,791.43
Houston Oil Co. of Texas, Houston, Tex.	72,623.40	122,341.31
Houston Prod. Co., Houston, Tex.	93,405.24	101,076.16
Humphreys Oil Co., Mexia, Tex.	4,057,584.30	4,007,079.19
Hogan, James T., Moran, Tex.	3,641.17	6,563.12
Henry & Gholson, Breckenridge, Tex.	136.07	193.18
Helvetia Oil Co., San Antonio, Tex.	8,146.18	11,486.01
Homaokla Oil Co., Oklahoma City, Okla.	26,003.93	26,256.66
Halmack Oil Co., Dallas, Tex.	4,165.25	7,955.63
Hobbs, Chenault & Burleson, Wichita Falls, Tex.	9,245.20	13,326.33
Hoppes, W. T., Burkburnett, Tex.	122.50	142 95
Hughes, J. K., Oil Co., Mexia, Tex.	198,676.49	200,115.67
Halliday & Caffall, Beaumont, Tex.	1,126.35	1,272.20
Hobson & Voorhees, San Antonio, Tex.	5,069.84	7,718.11
Hemby, J. M., Electra, Tex.	495.87	756.37
Henderson, E. R. Trustee, Tulsa, Okla.	1,047.17	1,896.94
Humphreys Oil Co., Mexia, Tex.	264,044.96	195,361.91
Hamilton, H. L., San Antonio, Tex.	315.31	520 26
Hamilton, George, San Antonio, Tex.	1,224.58	1,507.89
Hamon, Jake L., Estate, Ardmore, Okla.	6,831.20	12,228.83
Haynes, Jones Garcia Oil Co., Mercedes, Tex.	6,024.03	4,22 .72
Hockaday & Shaw, Wichita Falls, Tex.	1,073.54	1,932.37
Humphreys Oil Co., Wichita Falls, Tex.	154.74	193.68
Harvey, R. A. Houston, Tex.	700.03	950.12
Harris Fisher Oil Co., L. H. McCrea, Receiver, Cisco, Tex.	12,451.55	26,225.50
H. B. J. Oil & Gas Co., Wichita Falls, Tex.	6,079.92	11,721.11
Heydrick, Kell & Kell, Wichita Falls, Tex.	1,790.7	2,668.86
Hart-Mexia Syndicate, Fort Worth, Tex.	2,585.25	5,123.66
Hart Oil Corp., Fort Worth, Tex.	4,289.74	8,422.93
Hueco-Ranger Oil Co., El Paso, Tex.	2,216.72	3,879.26
Hughes, J. K., Developing Co., Mexia, Tex.	394,107.82	319,081.40
Hamilton, H. L., San Antonio, Tex.	2,083.41	3,208.45
Hill & Jones, Tonkawa, Okla.	21,367.10	31,808.60
Herbert Oil Co. of Texas, Fort Worth, Tex.	1,433.23	2,814.78
Hoffman, Roy, Breckenridge, Tex.	2,145.32	3,766.06
Hereford Oil Co., Electra, Tex.	24,721.49	41,976.74
Hobbs Brothers, Wichita Falls, Tex.	356.08	580.38
Humphrey & Merritt, Wichita Falls, Tex.	2,663 63	4,521.78
Hunt, J. C., Wichita Falls, Tex.	555.82	838.78
Haile & Knight, Fort Worth, Tex.	9,563.94	14,665.86
Hester, Hawkins & Ferguson, Wichita Falls, Tex.	5,948.74	6,824.58
Hofmeier & Deegans, Fort Worth, Tex.	1,589.04	2,820.60
Hoxworth Oil & Gas Co., Wichita Falls, Tex.	181.19	263 81
Hanes Oil Co., Fort Worth, Tex.	69,216.62	126,698.00
Hern, J. J., Laredo, Tex.	7,562.56	3,781.28
Inland Oil Co., Wichita Falls, Tex.	2,023.74	3,333.87
Indiana Ref. Co., St. Louis, Mo.	4,042.56	6,666.50
Invador-Burkburnett Synd., Muskogee, Okla.	717.35	1,261.73
Infield Pet. Co., Austin, Tex.	5,604.87	9,551.87
Inca, The, Oil Co., Tulsa, Okla.	4,580.97	8,474.79
Invincible Oil Co., Shreveport, La.	53,086.41	67,563.19
Iowa Park Prod. & Ref Co., Iowa Park, Tex.	17.80	23 71
Interstate Consolidated Oil Co., Des Moines, Iowa	3,811.41	7,328.94
Ironland Oil Co., Duluth, Minn.	946.82	1,991.87
Ilseng, A. G., Fort Worth, Tex.	21,787.51	30,754.08
Jay, Ted R., Sipe Springs, Tex.	413	619 50
Jack Dalton Oil Co., Mineral Wells, Tex.	9,850.17	14,873.75
John & Jeff Oil Co., Mineral Wells, Tex.	16,987.18	27,926.92
Johnson Bros., San Antonio, Tex.	13,516.47	16,965.04
Jackson, The, Co., San Antonio, Tex.	3,617.84	4,429.60
Jewett, Frank L., Breckenridge, Tex.	2,101.30	3,256.72
Judson Oil Co., New York, N. Y.	23,570.55	35,355.82
Junior Oil Co., Cross Plains, Tex.	8,151.62	17,554.76
Janellen Oil Co., Tulsa, Okla.	154.30	166.66
Japhet, C. B., Houston, Tex.	5,348.52	7,507.73
Johnson, O. C., Laredo, Tex.	7,973.47	5,105.02
Johnnie Talbert Oil Co., Midlothian, Tex.	2,898	5,796.00
Kavanaugh Pet. Co., Houston, Tex.	2,284.31	4,368.93
Kokomo Pet. Co., Gorman, Tex.	Not Given	328.70
Kirby Pet. Co., Houston, Tex.	206,171.11	211,883.86
Knotts, F. F., Wichita Falls, Tex.	1,125.62	1,869.95
Keough Bros. and Litzinger Oil Trust, Cisco, Tex.	13,960.66	30,442.61
Knight, A. L., Plainview, Tex.	10,571.10	21,776.46
Kuehn-McNeil-White-Kuehn-Cox-Firestone, Wichita Falls, Tex.	5,201.13	10,776.96
Kemp-Munger-Allen Oil Co., Wichita Falls, Tex.	7,417.04	14,342.06
Kate, The, Bell Oil Co., et al, Dallas, Tex.	4,859.86	8,844.94
Kemp, Randell & Wilson, Vernon, Tex.	194.28	275.79
Kemp, G. G., Vernon, Tex.	11.98	20.78
King Pet. Corp., Wichita Falls, Tex.	2,599.90	4,469.13
Kurz Oil Co., Somerset, Tex.	994.47	901.36
Ketch & King, Ardmore, Okla.	2,255.16	4,689.35
Kay, A. W., Graham, Tex.	1,913.04	4,382.72
Knight, W. T., & Co., Wichita Falls, Tex.	40,935.21	64,797.87
Kentucky, The, Oil Corp., Wichita Falls, Tex.	974.49	1,975.51
Kerr, T. P., Corsicana, Tex.	234.40	234.40
King, Booth & Nesbitt Synd., Pomona, Calif.	2,385.29	3,936.55
King, Booth & Nesbitt Synd., Pomona, Calif.	928.43	1,515.12
Kirk & Brewer, Gorman, Tex.	2,704 03	4,307.41
K. B. H. Y. Syndicate, Vernon, Tex.	1,558.57	3,649.56
Kishi, K., Orange, Tex.	5,743.18	6,662.45
Kornfield, Mrs. Fannie, Tulsa, Okla.	587.44	983.06
Kimmell & Dillard, Wichita Falls, Tex.	13,640.48	24,462.76
Keltz, E. L., Vernon, Tex.	12,540.78	12,714.92
Killam-Condren Oil Co., Laredo, Tex.	7,642.76	4,936.85
Kendrick, P. S., Albany, Tex.	3,497	6,294.60
Kendrick, P. S., Albany, Tex.	3,085.16	4,319.21
Keystone Drilling Co., De Leon, Tex.	280.63	402.96
Laclede Pet. C., Dallas, Tex.	236	609.50
LeVaima Pet. Co., Mexia, Tex.	34,282.65	34,282.65
Loonet, R. H., et al, Colorado, Tex.	2,676	1,771.20
Lewis Oil Co. and The Nat. Ref. Co., Pittsburgh, Pa.	138,596.37	139,469.53
Lake View Oil Co., Sour Lake, Tex.	60,238.41	74,185.45
Livingston, Henry S., Fort Worth, Tex.	875.66	1,196.90
Lytle Oil Assn., Lytle, Tex.	816.61	913.67
Lewis Oil Co., Pittsburgh, Pa.	14,479.84	24,524.31
Lake Graham Oil Co., Sour Lake, Tex.	2,609.88	2,777.79
Ladd-Hannon Oil Corp., Fort Worth, Tex.	599.47	702.42
Larkin, W. B., Wichita Falls, Tex.	1,025.99	2,024.60
Lee, The, Farm Oil Co., Wichita Falls, Tex.	1,930.73	2,965.79
Lake Oil Co., Beaumont, Tex.	20,304.26	24,143.31
Link Oil Corp., Houston, Tex.	6,505.74	6,577.50
Lee-Haus Oil Co., Minerva, Tex.	6,682.85	7,524.93
Lee Nichaus Oil Co., Minerva, Tex.	2,481.21	2,815.58
Lee Oil Co., Minerva, Tex.	7,202.98	8,176.03
Lain Oil Co., San Antonio, Tex.	2,736.48	3,187.77
Laredo Oil Co., Laredo, Tex.	14,085.72	9,856.72
Le Sil Oil Corp., Wichita Falls, Tex.	3,722.07	6,680.36
Langford, W. S., Wichita Falls, Tex.	12,102.44	26,056.20
Lucky Six Oil & Gas Co., Bangs, Tex.	705.94	704.94
Light Oil Co., Beaumont, Tex.	1,562.11	1,865.91
Lucky Seven Oil Co., Wichita Falls, Tex.	97.98	168.61
Little Caddo Syndicate, Fort Worth, Tex.	4,459.83	9,396.63
Lone Star Gas Co., Dallas, Tex.	16,376.49	27,919.84
Lou-Ellen, The, Oil Co., Denison, Tex.	1,329	2,778.83
Little, William, Breckenridge, Tex.	4,207.88	7,171.27
Lamb, George A., New York	1,061.59	1,891.20
Little, Wm., Receiver, Cooper Henderson Oil Co. Consolidated, Walker Chaney Lease, Breckenridge, Tex.	2,550.06	3,766.61
Little, Wm., Receiver, Cooper Henderson Oil Co. Consolidated, Breckenridge, Tex.	4,184.87	5,291.05
Little, Wm., Receiver, C. H. O. Co. of Tex., Breckenridge, Tex.	6,977.83	10,398.71
Little, Wm., Receiver, Cooper, Henderson Goodwin Lease, Breckenridge, Tex.	3,544.40	4,940.54
Lee, Homer, Wichita Falls, Tex.	2,016.65	3,863.84
Laning and Moninger, Wichita Falls, Tex.	10,891.55	15,928.60
Laning and Moninger, Wichita Falls, Tex.	4,406.50	9,101.91
Leonard Oil Co., San Antonio, Tex.	396.55	454.66
Lowe Parry Oil Co., De Leon, Tex.	208.56	315.55
Lowry Oil Corp., Muskogee, Okla.	9,515.05	17,673.01
Livinston Oil Corp., Tulsa, Okla.	53,270.96	82,075.21
McVey, E. H., Kansas City, Mo.	4,087.42	7,023.13
Mary Elizabeth Oil Co., Dallas, Tex.	187.91	370.12
McDorman, C. R., Ardmore, Okla.	356.32	647.75
Mutual Consolidated Oil, Fort Worth, Tex.	8,052.04	15,485.44
Mann, W. L., Wichita Falls, Tex.	921.64	1,250.32
Mayemack, The, Co., Cisco, Tex.	316.80	425.24
Mohegan Oil Co., Mohegan Lake, Tex.	1,093.65	1,736.73
Moore, F. L., Tulsa, Okla.	8,232.27	12,215.58
Moody, E. M. C., Dallas, Tex.	978 55	1,484.77
Mecon Oil Co., Houston, Tex.	27,513.00	33,299.34
Monarch Oil Ref. Co., Houston, Tex.	86,573.54	98,310.43
Mitchell, J. P., Sour Lake, Tex.	4,922.61	6,153.26
Mystery Oil Co., Beaumont, Tex.	1,165.00	1,887.30
McEwan, J. P., Trustee, Fort Worth, Tex.	1,885.64	3,361.30
Mahlstedt Mook Oil Co., Fort Worth, Tex.	4,492.00	6,064.24
Mandeville, M. C., Chickasha, Okla.	3,449.77	3,449.77
Martin Bros., San Antonio, Tex.	3,290.08	4,197.31
Mayfield, Joseph L., Wichita Falls, Tex.	485.19	1,008.79
Meridith, J. D., Moran, Tex.	173.20	261.32
Mitcham, G. P., Fort Worth, Tex.	156.61	339.41
Magnolia Pet. Co., Eastland, Tex.	2,446.57	3,764.31
Moore & Henderson, Tulsa, Okla.	2,046.67	4,159.92
Mutual Oil Co, Denver, Colo.,	19,382.09	44,413.37
Mercree Petroleum Corp., Tulsa, Okla.	3,053.32	2,142.44
Magnolia Pet. Co., Dallas, Tex.	2,077,276.86	2,839,938.93
Mercedes Pet. Co., Mercedes, Tex.	6,308.86	4,426.37
Merrian Pet. Co., W. Goforth, Receiver, Tulsa, Okla.	11,213.15	21,979.39
Montrose Oil Ref. Co., Shreveport, La.	4,248.21	7,820.81
McLennan & Hanon, Jr., Ardmore, Okla.	3,028.02	5,742.82
Mook-Texas Oil Co., Fort Worth, Tex.	11,762.38	22,611.39
Moss, H. S., Receiver, Mexia, Tex.	22,034.21	22,034.21
M. & V. Oil Co., Wichita Falls, Tex.	5,797.58	12,213.18
Mann McPhail Oil Co., Wichita Falls, Tex.	97.98	168.61
Mann Power Oil Co., Wichita Falls, Tex.	636.06	946.08
Mi leton Tex. Oil Synd., Eastland, Tex.	3,159 24	5,017.83
McMahon, F. M., Denver, Colo.	5,993.18	10,973.52
McCarthy Ed and Ed McCarthy & Co., Galveston, Tex.	907.76	1,146.54
Margay Oil Co., Tulsa, Okla.	12,144.12	24,095.37
McNamara Oil Co., Beaumont, Tex.	3,951.63	4,270.68
Maxwell Davis Well, Wichita Falls, Tex.	214.29	267.86
Mann Oil Co., Wichita Falls, Tex.	594.51	865.74
Marsalis Bros., Humble, Tex.	338.99	362.73
Marsalis Bros., Humble, Tex.	372.57	652.00
Magalis Bros., Humble, Tex.	62.00	108.50
Miller, Herbert G., Eastland, Tex.	1,144.70	1,693.73
Murphy Oil Co. of Pa., Dallas, Tex.	1,130.65	1,650.94
Maxon Company, Wichita Falls, Tex.	614.09	954.32
Mid-Co Pet. Co., Tulsa, Okla.	1,926.81	2,913.64
McDabb Oil Co., Wichita Falls, Tex.	6,852.66	9,459.69
McDonald, S. L., Wichita Falls, Tex.	512.02	921.63
McGoldrick, E. W., Shreveport, La.	3,368 72	4,057.87
Marathon Oil Co., San Antonio, Tex.	2,034.20	2,136.41
Martin Pet Co., Humble, Tex.	2,510.35	3,137.93
Mid-Kansas Oil & Gas Co., Findlay, Ohio	102,709.80	181,730.37
Minor Oil Co., Beaumont, Tex.	9,253.13	11,102.75
Mutual Oil Co., Denver, Colo.	15,457.50	30,690.65
Maben Oil Corp., Wichita Falls, Tex.	1,649.45	3,431.18
Marnet Oil & Gas Co., New York, N. Y.	3,840 25	3,528.71
Montreal Oil Co., Breckenridge, Tex.	1,478.85	2,449.37
Matador Oil & Gas Co., Quanah, Tex.	626.68	1,096.69
Minerva Pet. Co., Minerva, Tex.	1,007.42	1,658.69
McCarty Oil Co., Wichita Falls, Tex.	36,360 56	80,201.39
Massie, Ray & Featherstone, Wichita Falls, Tex.	11,569.41	14,046.59
McBride, W. C., Inc., St. Louis, Mo.	917.39	854.71
Manton, H. D., San Antonio, Tex.	465.79	531.09
Miami-Laredo Oil Co., Laredo, Tex.	4,428.24	2,826.17
Miranda Oil Co., Laredo, Tex.	890.35	653.21
McCallister, Wesley, Lubbock, Tex.	343.80	595.33
McNallen & Griffin, Tulsa, Okla.	2,132.08	3,173.15
Magna Oil & Ref. Co., Tulsa, Okla.	3,675.90	6,106.24
Markham, J. H., Jr, and Tidal Oil Co., Tulsa, Okla.	8,091.33	14,946.72
Mayemack Co., The, Cisco, Tex.	3,271.50	4,133.95
McMan Oil & Gas Co., Tulsa, Okla.	419,764.35	471,358.59
Minntex Oil Co., Wichita Falls, Tex.	1,396.83	2,066.60
Nortex Drilling & Dev. Co., St. Louis, Mo.	911 30	1,615.61
New Domain Oil & Gas Co., The, Dallas, Tex.	31,848.96	38,633.67
National Oil Co., San Antonio, Tex.	2,691.75	3,027.97
Noble, Chas. F., Oil & Gas Co., Tulsa, Okla.	13,474.57	24,560.36
North Texas Oil Co., Vernon, Tex.	1,005.93	1,981.28
Niehaus-Isaaca-Lee Co., Minerva, Tex.	6,158.95	6,863.79
National, The, Supply Co., Toledo, Ohio	1,220.62	1,688.51
Newton-Gillchreas, Inc., Goose Creek, Tex.	5,217.93	6,429.51
Oil Developing Co., St. Louis, Mo.	1,097.38	2,155.76
Owenwood Oil Corp., Fort Worth, Tex.	11,741.31	18,920.83
O'Keefe, C. A., Fort Worth, Tex.	1,188.32	2,317.61
Oktaha, The Co., Tulsa, Okla.	743.28	1,263.57
Owens, Petroleum Co., Cameron, Tex.	3,704.74	4,714.41
Owens, Refining Co, Cameron, Tex.	285.74	309.83
Offenbacher, Emile, Tulsa, Okla.	661.81	1,226.62
Offenbacher, Emile, Trustee, Tulsa, Okla.	129.73	213.67
Oklahoma Bell Oil Co., Minerva, Tex.	749.98	815.64
Oregon, Nacogdoches Oil Co., Nacogdoches, Tex.	179.18	447.96

GASOLINE EXTRACTION EQUIPMENT



In the field they will tell you what it means to have Ingersoll-Rand equipment. Here men know from experience that these machines give uninterrupted, reliable service under the most severe duty.

They appreciate that the buidlers know their problems and have furnished machinery built to meet the conditions.

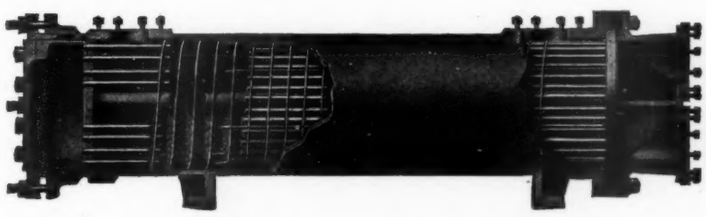
And, they know that there is an Ingersoll-Rand office nearby where they can get immediate attention and the services of engineers whose specific duty is to co-operate with owners and operators of gasoline extraction plants.

INGERSOLL-RAND COMPANY, 11 Broadway, New York

747-C

2000 In Service

For applications involving heat exchange between liquids



MULTIWHIRL HEAT EXCHANGERS

CONDENSERS—DEPHLEGMATORS—COOLERS

THE GRISCOM-RUSSELL COMPANY

94-A West St., New York

Philadelphia, Washington, Boston, Hartford — Rochester, Pittsburgh, Chicago, Cleveland — Toledo, Detroit, Columbus, Milwaukee — Minneapolis, St. Louis, Kansas City, Charlotte — New Orleans, Houston, Dallas, Fort Worth — Denver, Salt Lake City, San Francisco, Los Angeles, Seattle

NAME .....
ADDRESS .....
The Griscom-Russell Co.
94 West St., New York City
Gentlemen:—Please send copy of your Bulletin No. 910, describing Multiwhirl Coolers
O.&G.J.—12-6-23

Overbey, J. D., Iowa Park, Tex.	1,838.81	2,650.67
Odsil Oil Co., New York, N. Y.	1,749.12	2,878.99
Oil Investment Co., Wichita Falls, Tex.	5,926.60	11,119.48
O'Neil, H. A., Wichita Falls, Tex.	3,832	5,012.08
Ohio-Somerset Oil Co., San Antonio, Tex.	2,795.88	2,317.58
O'Neil, John, Wichita Falls, Tex.	15,388.88	31,058.54
Oriental Oil Co., Dallas, Tex.	5,252.35	7,885.55
Orange Petroleum Co., Orange, Tex.	80,642.30	96,463.40
Oyler, Eugene, Moran, Tex.	1,875.87	3,073.08
Oil Production Co., Houston, Tex.	1,149.25	1,149.25
Olson, Quigg & Nordyke, Mirando City, Tex.	8,080.60	5,108.25
Orth, Thomas R. T., Wichita Falls, Tex.	1,412.03	1,974.85
Prairie, The, Oil & Gas Co., Independence, Kan.	97,362.50	176,939.30
Phillips Pet. Co., Bartlesville, Okla.	16,295.24	28,859.58
Priddy, Walter M., Wichita Falls, Tex.	24,769.01	42,355.01
Petroleum Dev. Co., New York	5,247.34	9,707.99
Parkersburg Drilling Co., Cisco, Tex.	1,083.99	1,083.99
Placid Petroleum Co., Wichita Falls, Tex.	1,119.3	2,758.36
Paraffine, The, Oil Co., Beaumont, Tex.	7,114.26	8,415.20
Perkins, J. J., Wichita Falls, Tex.	14,623.37	25,273.18
Progressive Prod. Co., Kansas City, Mo.	9,796.28	20,879.84
Prather, Ed, Special, Houston, Tex.	709.76	806.05
Pennant Oil & Gas Co., Tulsa, Okla.	11,803.40	17,937.46
Phillips, Joe W., Wichita Falls, Tex.	2,008.41	4,016.32
Philip Bros., Beaumont, Tex.	2,813.29	3,319.22
Plateau Oil Co., Fort Worth, Tex.	15,864.90	25,218.15
Pioneer Oil, Gas & Ref. Co., San Antonio, Tex.	2,510.94	3,059.22
Prescott-Phoenix Oil & Gas Co., Muskogee, Okla.	397.59	778.67
Pinto Oil Co., Mineral Wells, Tex.	398.37	398.37
Pomona Mutual Oil Synd., Pomona, Calif.	5,467.41	10,313.96
Pomona-Texas Oil Synd., Pomona, Calif.	3,732.82	6,526.03
Pardee, L. M., Breckenridge, Tex.	1,592.75	3,181.92
Patterson Oil Co., Brownwood, Tex.	732.30	732.30
Prescott-Phoenix Oil & Gas Co., Wichita Falls, Tex.	3,709.18	7,306.62
Panhandle Ref. Co., Dallas, Tex.	162,562.31	240,186.48
Patterson, J. R., Brownwood, Tex.	193.06	193.06
Pioneer Oil & Ref. Co., San Antonio, Tex.	248.00	288.40
Pure, The, Oil Co., Columbus, Ohio	1,220.65	2,215.36
Pomona Valley Oil Synd., Pomona, Calif.	186.60	270.58
Petroleum Producers Co., Wichita Falls, Tex.	26,162.73	34,488.65
Petzer & West, Breckenridge, Tex.	7,067.15	13,145.20
Porter, B. E., & Co., Wichita Falls, Tex.	348.65	741.99
Porter & Bernard, Wichita Falls, Tex.	409.58	829.62
Producers Supply & Tool Co., Marietta, Ohio	1,639.17	2,733.68
Pennok Oil Co., Tulsa, Okla.	53,075.61	93,330.59
Park, J. C., Iowa Park, Tex.	1,225.86	1,478.03
Palmer & Chenault, Wichita Falls, Tex.	775.11	1,342.00
Paggi Bros. Oil Co., Beaumont, Tex.	12,282.41	14,365.79
Palo Pinto Oil Co., New York, N. Y.	2,683.47	4,169.39
Pois & Kruger, Trustees, Wichita Falls, Tex.	12,668.04	18,441.32
Powell, J. L., Wichita Falls, Tex.	816.74	923.11
Pois, M., Trustee, Wichita Falls, Tex.	1,754.81	1,854.57
Planet Petroleum Co., Bartlesville, Okla.	177,102.22	378,999.82
Parry Oil Co. of Texas, Fort Worth, Tex.	3,050.14	4,945.47
Pender Producing Co., Denton, Tex.	42,590.14	76,673.66
Preston Oil & Gas Co., Brownwood, Tex.	1,645.7	2,690.92
Quincy Oil Co., Chillicothe, Tex.	282.46	282.46
Quigg, J. W., Miranda City, Tex.	6,340.53	4,067.92
Quakins Petroleum Co., New York, N. Y.	6,450.20	10,573.20
Republic Prod. Co., Houston, Tex.	619,684.77	1,047,442.63
Regna Oil Co., Saratoga, Tex.	6,347.22	6,363.76
Reclamation, The, Co., Fort Worth, Tex.	20,090.86	37,600.41
Rycade Oil Corp., Houston, Tex.	98,675.37	116,173.15
Rainbow's End Oil Co., Los Angeles, Calif.	6,462.38	12,066.38
Reliance, The, Oil Co., Beaumont, Tex.	8,300.80	9,826.04
Roxana Pet. Corp., St. Louis, Mo.	408,394.11	401,476.34
Rockey, The River Oil Co., Wichita Falls, Tex.	1,295.52	2,205.71
Rentex Oil Co., San Antonio, Tex.	5,378.75	6,179.57
Roberts & Hill, Wichita Falls, Tex.	1,040.47	2,065.35
Robinson, A. D., Dallas, Tex.	5,604.54	8,948.87
Rockwell, J. A., & Co., Warren, Pa.	12,047.90	18,050.16
Rosenberg, Jacob, Tulsa, Okla.	395.77	723.14
Root, Rhodes & Sykes, Eastland, Tex.	12,900.50	18,828.14
Ruyle Farm & Oil Co., Wichita Falls, Tex.	23,938.71	39,021.98
Radio, The, Oil Co., Wichita Falls, Tex.	5,805.69	9,353.83
Red River Oil Co., Tulsa, Okla.	40,193.91	75,717.32
Ryan Pet. Corp., Bartlesville, Okla.	20,792.93	35,582.98
Royalties, The, Investment Co., San Antonio, Tex.	1,882.92	2,645.76
Rumbaugh, C. E., and T. J. Esterly, Moringsport, La.	386.34	567.92
Russell, Frank Oil Co., Wichita Falls, Tex.	594.51	865.74
Ranger Gulf Prod., Tulsa, Okla.	15,215.16	25,628.55
Riley, Henry, Breckenridge, Tex.	2,452.30	2,944.97
Riley, Henry Co., Breckenridge, Tex.	981.36	1,462.46
Ross Amigon Oil Co., Laredo, Tex.	22,372.82	15,531.96
Rio Grande Petroleum Corp. Houston, Tex.	6,664.96	4,258.67
Ross Segunda Oil Co., Laredo, Tex.	9,613.25	6,751.21
Rydal Oil Co., Coursen-Matches, Luling, Tex.	4,810.02	3,347.32
Riner & Bailey, Wichita, Falls, Tex.	14,310.36	2,074.68
Rydal Oil Co., Luling, Tex.	31,072.10	15,380.69
Reinhart, M. J., Oklahoma City, Okla.	19.65	34.78
Reinhart, M. J., Trustee, Oklahoma City, Okla.	1,274.14	2,345.78
Republic Supply Co., Houston, Tex.	3,978.65	6,186.81
Ramming, Henrietta C., Wichita Falls, Tex.	4.67	6.77
Ramming, R. W., Wichita Falls, Tex.	1,740.31	3,244.31
Ramming, W. F., Wichita Falls, Tex.	23.45	46.90
Red River Oil & Gas Co., Bowie, Tex.	68.74	29.21
Rotary Drilling Co., Wichita Falls, Tex.	333.95	445.09
Russell-Sanderson Oil Co. No. 3, Fort Worth, Tex.	1,449.89	2,925.82
Roeser & Pendleton, Breckenridge, Tex.	34,766.24	62,778.87
Rhodes & Highers, Breckenridge, Tex.	968.04	1,490.72
Sun Oil Co., Beaumont, Tex.	271,413.81	341,300.24
Shamrock Oil Co., Waxahachie, Tex.	37,854.03	68,477.94
Smith, E. L., Mexia, Tex.	310,425.98	297,882.92
Stull, R. O., Wichita Falls, Tex.	35.09	58.96
Supreme Oil Co., Orange, Tex.	23,189.74	30,482.18
Simms Oil Co., Dallas, Tex.	291,725.04	348,630.66
States Oil Corp., Eastland, Tex.	61,430.41	86,535.93
Skookum Oil Synd., Wichita Falls, Tex.	597.61	933.80
San Diego Oil & Gas Co., Alice, Tex.	1,021	1,531.50
Sink, Joel, Corsicana, Tex.	233	233.00
Sipe Springs Oil Co., Sipe Springs, Tex.	217.24	315.00
Southwestern Oil Dev. Co., Eastland, Tex.	3,977.05	6,199.79
Somerset Crude Oil & Ref. Co., San Antonio, Tex.	10,164.83	13,818.36
Smoot, Geo. A., Wichita Falls, Tex.	215.20	301.30
Sun Oil Co., Dallas, Tex.	350,474.31	436,113.40
Superior Oil Co., Superior, Wis.	322.03	449.37
San Bernard Oil Co., Beaumont, Tex.	6,347.58	7,452.02
Sitrin, M., Tulsa, Okla.	153.23	262.40
Sitrin, Sam, Tulsa, Okla.	719.51	1,296.58
Stella Oil Co., Beaumont, Tex.	7,443.99	8,885.23
Seventy-Two Oil Co., Marietta, Ohio	1,658.90	2,713.69
Shaw & Rathke, Wichita Falls, Tex.	108,376.85	175,490.69
Sherman Oil & Gas Co., Pittsburgh, Pa.	215.59	360.13
Sloan Oil Co., Colorado, Tex.	7,842.31	5,679.26
Speed, C. D., Corsicana, Tex.	57.12	57.12
Standard Oil Land & Leasing Co., Electra, Tex.	298.81	452.46
Shappell, T. O., & Sons, Wichita Falls, Tex.	9,121.43	15,762.66
Silb-Erman Oil Co., Wichita Falls, Tex.	3,377.73	5,924.96
Sixty-Six Oil Co., Wichita Falls, Tex.	587.76	961.61
Smoot, G. A., Wichita Falls, Tex.	254.54	356.35
Stovall Oil & Gas Co., a Corporation, Moran, Tex.	8,021.89	13,207.75
Strawn Pet. Co., Denver, Colo.	11,221.63	24,083.35
Swensondale Oil Co., Caddo, Tex.	29,465.50	32,412.53
Scarbrough, W. A., Burkburnett, Tex.	3,687.94	5,609.96
Scott, F. H., and D. H. McClure, Fort Worth, Tex.	273.20	564.96
S. D. Oil Co., Brownwood, Tex.	674	842.72
Sunray Oil Corp., New York, N. Y.	344.56	650.44
Sunray Oil Corp., New York, N. Y.	230.25	376.35
Skelly Oil Co., Tulsa, Okla.	73,846.28	87,079.91
Staley Mashburn Oil Co., Wichita Falls, Tex.	911.38	1,516.62
Staley, J. A., Wichita Falls, Tex.	3,280.17	6,607.74
Staley, Wynne & Fowler, Wichita Falls, Tex.	15,687.26	29,951.22
Stouchford Bros., Iowa Park, Tex.	1,519	2,810.00
Swastika Oil Syndicate, Wichita Falls, Tex.	14,297.77	18,189.06
Schoolfield, R. E., Wichita Falls, Tex.	388.30	654.62
Schoolfield, R. E., and Paul B. Scott, Wichita Falls, Tex.	586.41	822.32
Shasta Oil Co., Mirando City, Tex.	3,584.75	2,210.99
Sinclair Oil & Gas Co., Tulsa, Okla.	24,112.85	45,235.44
Slick, T. B., et al, Oklahoma City, Okla.	56,286.12	120,412.03
Somerset Oil Co., San Antonio, Tex.	1,938.36	2,263.58
Staley, J. I., & Co., Wichita Falls, Tex.	15,190.83	27,874.18
Staley & Fritz, Wichita Falls, Tex.	8,695.80	16,736.94
Staley & Wynne, Wichita Falls, Tex.	72,875.74	118,708.07
Staley, Langford & Wynne, Wichita Falls, Tex.	6,234.95	10,991.81
Stone, F. W., & Co., Cross Plains, Tex.	2,196.74	4,480.72
Superior Oil Producing Co., Lexington, Tex.	4,201.44	6,742.40
Sankey Oil Co., Fort Worth, Tex.	26,098	47.01
Snider, C. W., Wichita Falls, Tex.	5,318.52	11,290.36
Stephens Oil Co., Sour Lake, Tex.	1,008	1,065.71
Sammel, West & McCandless, Robinson, Ill.	3,809.21	6,568.87
Simms, W. L., et al, Wichita Falls, Tex.	47.89	76.62
Sooner Oil Assn., Wichita Falls, Tex.	7,494.00	9,872.79
Sankey, John S., Est., Fort Worth, Tex.	47.89	76.62
Silk, W. W., Wichita Falls, Tex.	1,047.33	1,738.57
Sioux Oil & Ref Co., Wichita Falls, Tex.	6,195.44	10,035.95
Stewart, S. H., Desdemonia, Tex.	Not Given	2,333.06
Shinholt & Colquitt, Eastland, Tex.	2,269.97	3,766.33
Sutherland Oil Co., Houston, Tex.	773.72	853.61
Southwestern Pet. Co., L. C. Heydrick, W. H. Hortenstein and J. L. McMahon, Tulsa, Okla.	712.74	1,266.57
Star State Oil Co., Moundsville, W. Va.	528.12	686.58
Stout Petroleum Co., Brownwood, Tex.	183	265.35
Southwest Petroleum Co., Wichita Falls, Tex.	656.18	1,369.10
Snowden & McSweeney Co., New York, N. Y.	254,561.38	362,670.94
Southern States Lease and Prod. Co., Fort Worth, Tex.	12,171.52	15,119.08
Smith, D. F., Caddo, Tex.	930	1,364.48
Southern Petroleum Co., Houston, Tex.	16,220.78	19,663.56
Sanders-Taylor Oil Co., Allies Lease, Wichita Falls, Tex.	4,908.30	8,519.52
Sanders-Taylor Oil Co., Crescent Lease, Wichita Falls, Tex.	450.43	675.64
Sanders-Taylor Oil Co., Forest Lease, Wichita Falls, Tex.	5,274.98	8,703.71
Saunders, John R., Wichita Falls, Tex.	23.45	46.90
Seventy-Two Oil Co., Thrift, Tex.	2,028.00	3,244.80
Sullivan, The, Oil Co., St. Louis, Mo.	6,082.14	11,031.98
Stsley, L. M., Wichita Falls, Tex.	353.73	694.83
Straus-Allen Oil Co., Wichita Falls, Tex.	1,507.32	1,768.35
Timblin, W. E., Wichita Falls, Tex.	647.91	944.16
Texas Co., The, Houston, Tex.	2,627,666.10	3,778,971.75
Texas Pacific Coal & Oil Co., Thurber, Tex.	314,832.93	314,832.93
Tillicum Oil Association and Drillers Int., Wichita Falls, Tex.	919.18	1,326.25
Thompson & McKinnis, Ranger, Tex.	808.60	1,469.17
Trinity Prod. Co., Dallas, Tex.	1,098.45	2,123.67
Turgeon, Ben, Putnam, Tex.	1,272.97	2,300.31
Texas Consolidated Oil Co., San Francisco, Calif.	19,040.20	28,391.60
Thomas, Mack, Wichita Falls, Tex.	648.87	860.15
Texas Southern Oil & Dev. Co., San Antonio, Tex.	7,142.87	10,772.24
Texas Standard Oil Pur. Co., Houston, Tex.	2,912.69	5,559.34
Trumbo, A. C., Muskogee, Okla.	55.44	108.61
Texas Fed. Oil Co., Electra, Tex.	501.54	797.53
Texota Pet. Co., Electra, Tex.	520.10	842.56
Theis Oil Co., Sour Lake, Tex.	5,851.82	7,094.39
Texas Buffalo Oil Co., San Antonio, Tex.	1,321.44	2,947.52
Texas United Oil & Ref. Co., Wichita Falls, Tex.	1,464	2,342.73
Tidal Oil Co., Tulsa, Okla.	444,498.32	444,498.32
Triangle Oil Co., Wichita Falls, Tex.	1,733.35	2,746.56
Thaxton, W. H., Austin, Tex.	320.72	306.03
Transcontinental Oil Co., Pittsburgh, Pa.	12,111.48	22,997.02
Two Republic Oil & Gas Co., Laredo, Tex.	27,894.57	19,526.20
Texmex Oil Co., Tulsa, Okla.	1,068.93	2,134.78
Tucker & Langford, Wichita Falls, Tex.	43,866.74	74,056.10
Thompson Oil Corp., Ranger, Tex.	5,733.21	6,656.53
Tri Mutual Oil Dev. Co., Rapid City, S. D.	55.95	111.74
Texas, The, Buffalo Oil Co., San Antonio, Tex.	1,059.69	1,211.99
Texas, The, Electric Co., Columbus, Ohio.	621.74	1,038.30
Texas Plains Snyd., Chicago, Ill.	756.26	851.52
Texas Fidelity Oil Corp., Lewisville, Ky.	11,992.43	20,635.25
Texas Petroleum & Dev. Co., Cameron, Tex.	674	696.01
Texas Petroleum & Dev. Co., Cameron, Tex.	638	101.20
Thorman, H. C., San Antonio, Tex.	1,208.29	2,307.83
Texas Oil Corp., Dallas, Tex.	390.52	360.16
Texhoma Oil & Ref. Co., Wichita Falls, Tex.	579,507.04	938,239.59
Taylor-Sibley Snyd., Wichita Falls, Tex.	6,022.80	11,443.32
Taylor, E. P., No. K. M. A., Wichita Falls, Tex.	1,659.04	2,152.17
Texas Oil Prod. Co., Dallas, Tex.	Not Given	292.07
Texas Oil Prod. Co., Dallas, Tex.	329.58	269.84
Tarver Oil Prod. Co., Beaumont, Tex.	992.07	1,630.00
Texas-Knight Oil & Gas Co., Fort Worth, Tex.	5,225.26	6,189.25
The Texokan Prod. Co., Coffeyville, Kan.	9,146.69	15,485.18
Tidal Oil Co., Tulsa, Okla.	31,937.21	42,573.66
Tidal Osage Oil Co., Tulsa, Okla.	6,659.70	11,212.63
Tidal-Western Oil Corp., Tulsa, Okla.	5,014.66	7,585.50
United North & South Oil Co., Luling, Tex.	354,076.29	177,038.15
United Oil & Fuel Co., Wilmington, Dela.	1,896	2,190.12
U. S. Texas Oil Corp., Dallas, Tex.	211,868.36	204,798.80
Unity Oil Co., Beaumont, Tex.	24,434.99	31,562.92
Union Oil Co. of Nevada, Graham, Tex.	12,711.24	18,518.05
Val Verde Oil Co., Del Rio, Tex.	3,868	4,762.45
Virginia Oil Assn., Fort Worth, Tex.	7,315.83	13,107.71
Van Cleave Trust, Wichita Falls, Tex.	3,839.26	7,244.49
Volcanic Products Co., Brenham, Tex.	50	80.00
Vasser, C. A. Burburnett, Tex.	1,152.86	2,161.69
Vulcan Oil Co., Inc., Preston Morten, Receiver, Tiffin, Tex.	2,639.41	4,562.99
Warren, W. H., Corsicana, Tex.	79.59	100.86
Warren, W. H., Corsicana, Tex.	73.44	63.23
Welson Signa Oil Co., Saratoga, Tex.	493.20	514.25
Wallace, Chas. Wm., Wichita Falls, Tex.	39,006.20	57,069.25
Wolfe, W. A., Moran, Tex.	375.39	587.36
Weber, Howard, Bartlesville, Okla.	7,547.61	12,961.25
Weber, Howard, Bartlesville, Okla.	6,489.79	6,488.79
Weber, Howard, Bartlesville, Okla.	2,978.72	5,166.50
Weber, Howard, Bartlesville, Okla.	2,323.86	3,962.37
Weber, Howard, Bartlesville, Okla.	1,727.92	3,002.03
Weber, H. C., Bartlesville, Okla.	2,489.32	4,152.47
Weber, Howard Trustee, Bartlesville, Okla.	1,508.22	2,633.21
Weldon, The, Oil Co., Saratoga, Tex.	12,734.14	14,754.82
Westervelt-Noble et al, Oklahoma City, Okla.	10,212.01	17,737.96
Whaley-Mineral & Realty Trust, Fort Worth, Tex.	7,604.94	13,253.56
White Oil Corp., Houston, Tex.	45,522.52	88,710.50
Witherspoon Oil Co, San Antonio, Tex.	248,152.36	228,516.31
Wagner, Abe W., No. 3, Houston, Tex.	3.06	3.31
Wagner, Abe W., No. 4, Houston, Tex.	3.06	3.31
Walker, B. S., Breckenridge, Tex.	1,916.45	3,066.32
Worth Oil Co., Tulsa, Okla.	507.04	1,013.16
Wilson-Broach Co., The, Beaumont, Tex.	20,165.11	23,758.53
Westheimer & Daube, Ardmore, Okla.	191.41	300.60
Walker-Caldwell Prod. Co., Breckenridge, Tex.	9,939.85	14,365.79
Woodrow Lee Trust, Wichita Falls, Tex.	1,285.24	2,717.39
Wallace, Chas. Wm., Wichita Falls, Tex.	199,046.42	398,830.76
Wallace, Chas. Wm., Wichita Falls, Tex.	39,181.37	87,193.97
Weakley, B. F., Graham, Tex.	1,031.00	1,751.64
Wonder Oil Co., Inc., Houston, Tex.	2,814.18	3,406.42
Wise & Jackson, Sapulpa, Okla.	5,685.87	10,110.33
Warren & Hayes, Levita, Tex.	2,238.56	2,250.48
Weisman, E. S., McKinney, Tex.	103.18	220.58
Weisman, E. S., McKinney, Tex.	88.41	199.12
West, F. B., Houston, Tex.	2,166.46	3,221.51
Witcher, Annie L., Wichita Falls, Tex.	3,407.76	6,605.23
Waggoner, R. M. Special, Wichita Falls, Tex.	16,146.46	26,641.66
Wellis, W. G., Trustee, Nacogdoches, Tex.	951	2,377.50
Western Oil Fields Corp., Denver, Colo.	284,040.64	298,242.67
Willis Oil Co., Wichita Falls, Tex.	161.64	102.83
Wilson Drilling Co., Wichita Falls, Tex.	9,755.54	14,799.14
Winnipeg Oil Co., Wichita Falls, Tex.	1,553.11	3,137.28
Woodburn Oil Corp., Philadelphia, Pa.	19,583.18	37,208.64
Wilkinson, Lee, Sour Lake, Tex.	298.12	333.65
Woodrow Lee Trust, Wichita Falls, Tex.	1,553.39	3,164.11
Western Oil Corp., Wichita Falls, Tex.	7,480.18	13,627.33

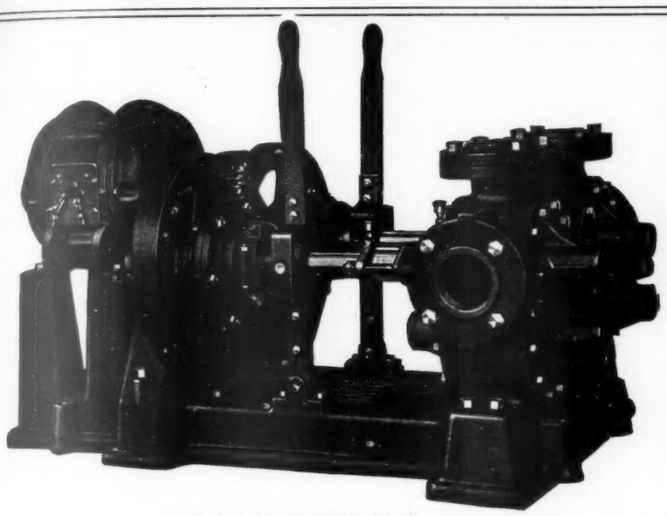


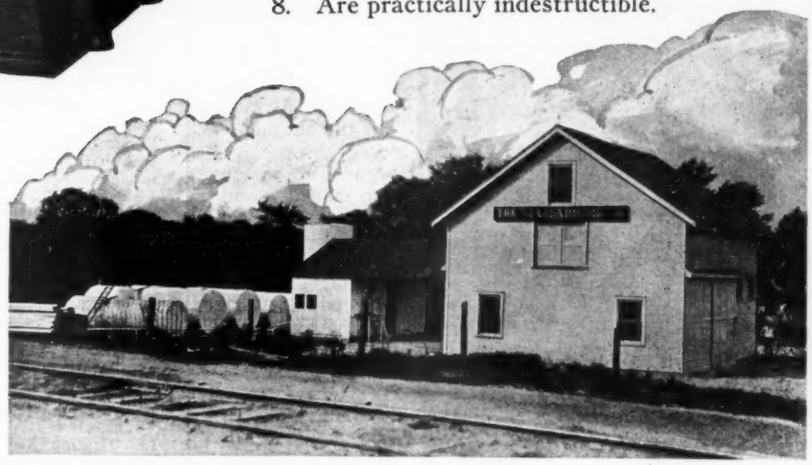
Fig. 3600—D. M. C. No. 5

TRAHERN PUMPS

For Bulk Oil Stations

Trahern Pumps are in demand at Bulk Oil Stations for many reasons. Here are a few of them:

1. Trahern Pumps are built for service.
2. They handle any liquid of any viscosity which does not contain grit.
3. They cut bulk loading and unloading costs.
4. Have large capacity.
5. Work against high pressure.
6. Operate at low speed.
7. Have long life.
8. Are practically indestructible.



Trahern Pumps are making good service records at refineries and jobbing stations wherever used.

For real economy and service use Trahern Gasoline and Oil Pumps.

Send for Bulletin 47
(Revised Edition)

LEADER-TRAHERN CO.
Decatur, Ill.
New York Chicago
Plants: Decatur and Rockford, Ill.

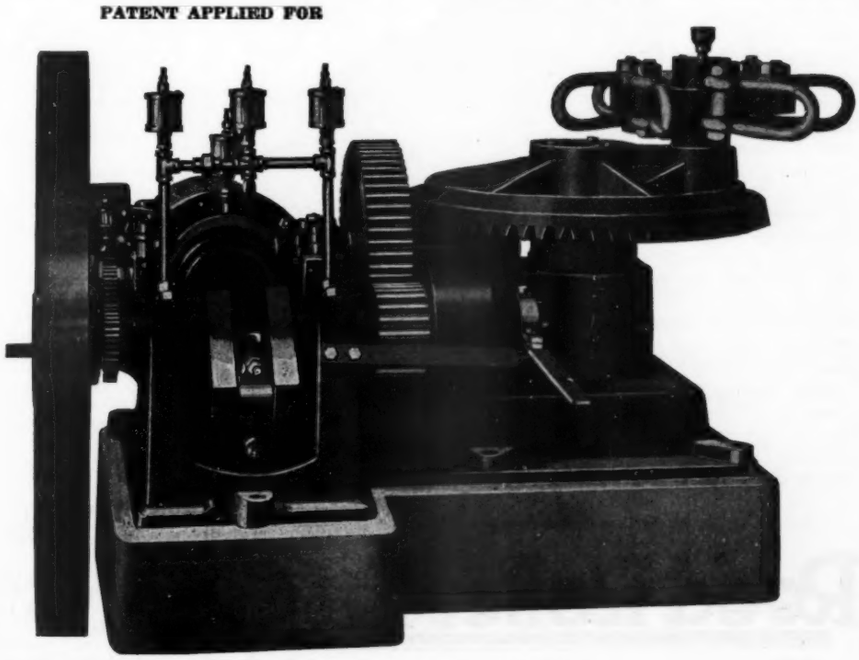
New Type Combination Geared Power

PATENT APPLIED FOR

MANUFACTURED IN TWO SIZES

With 8 H. P. and 12 H. P. Four-Cycle Gas Engine

Equipped with magneto ignition, far superior to old style combination power that requires swings to hook on wells. Eight H. P. will handle six 1,000-foot wells, when balanced. Weight 2,100 lbs. 12 H. P. will handle ten 1,000-foot wells, when balanced. Weight 4,300 lbs. These units are self contained and can be set on wood or concrete foundations.



The Pattin Brothers Company

Main Office and Works: Marietta, Ohio

Branch Warehouse and Office: Tulsa, Okla., Wichita Falls, Texas **Carried in Stock by Frick & Lindsay Co., in Kentucky**

This Luling Night Crew Knows Their Stuff

Knock Records Cold With

Reed Roller Bits

Using Slush for Lubrication

First from left—G. O. Nokes, tool pusher; Second from left, F. E. Blythe, head driller of night crew.

Right through 131 feet of hard rock with only one pull out, same being necessary on account of the formation.

Contrast this with having to pull out frequently to refill oil chamber (which was the old method.)

Figure the time thus saved—and the risks of the pull out—and you will know one of the big reasons why popular demand for Reed Bits is sweeping rotary fields everywhere.

The run made in 48½ hours with one set of cutters was done **without a drop of lubricating oil,** using slush for lubrication.

Slush lubrication is a Reed system exclusively and is possible in no other bits; this is admitted in sworn testimony by competitors.

The strongest rock bit ever built—likewise fastest and safest.

Drilling crews are at their best when furnished with Reed Roller Bits and Reamers.

Anything that lessens the risk of losing a hole, eliminates needless pull outs and speeds up drilling, wins over the driller—right now.

We wonder if there are any drillers, who do not know about this Reed Slush Lubrication System? If there are—we want them to write us for a copy of "Rubiayat of O'Gosh Dingut"—it tells the whole darn story as it came right off the derrick floor.

Reed Service Means Now

Reed Roller Bit Co

HOUSTON, TEXAS, U. S. A.

Stocks with Continental Supply Co. and Frick-Reid Supply Co.

CALIFORNIA OFFICE: 1341 Santa Fe Avenue, Los Angeles. Phone 660-68. Ask for Mr. E. B. Wiggins.

White, James H., Wichita Falls, Tex.	451.48	676.98
Walker, P. G., Jr., Tulsa, Okla.	164.30	166.66
Wickett, F. H., Shreveport, La.	4,807.83	3,196.11
Williams, Burt, Wichita Falls, Tex.	1,422.86	2,473.61
Ward, Julian E, Lease	201.81	446.23
Ward, Julian E., Lease	226.80	497.01
Wood, Owen A. Trustee, Fort Worth, Tex.	43,885.15	47,207.32
Yates, Martin T., Wichita Falls, Tex.	2,008.02	4,016.04
Yuba Oil Co., Nacogdoches, Tex.	933.12	2,332.80
Yuba Refining Co., Nacogdoches, Tex.	297.87	744.67
Yingling, S. C., Winfield, Kan.	981.59	1,150.70
Young Bros. & Kennedy, Wichita Falls, Tex.	6,306.91	8,577.46
Yates Oil & Gas Co., Fort Worth, Tex.	304.84	5,375.28
Yates, M. T., Wichita Falls, Tex.	2,260.86	4,521.72
Zapata Company, The, Memphis, Tenn.	2,609.24	1,651.31

CANADIAN FIELDS

(Continued from Page 40)

finery on a 40-acre site at Edmonton, at an initial outlay for plant and site of approximately $150,000. This plant is to run on Kevin-Sunburst crude, together with any local production that may be developed. Extensive shipments of Salt Creek crude are reported to the new Imperial Oil, Ltd. refinery at Calgary, which will start on a basis of 5,000 bbls. a day. Imperial Oil, Ltd. has now 80,000 bbls. of crude in storage, and had storage for 100,000 bbls. additional.

East Central Alberta

In east central Alberta, British Petroleums, Ltd. No. 2, Section 30-46-6w4, has been fitted with temporary 4-inch tubing inside the 8½-inch casing to a depth of 1,960 feet. The well when opened up for demonstration flows by heads at intervals of about 1 minute, flowing about 120 bbls. in 3 hours. The gas pressure, however, seems insufficient to produce a continuous flow; and the well will probably be put on the pump. Edmonton Gas & Development Co., which drilled the two British Petroleums, Ltd. tests will move the heavy rotary outfit to its own leases adjacent to the British Petroleums holdings, and put down a test of its own, which is expected to drill through the winter. It is reported that Imperial Oil, Ltd. Grattan No. 2, Section 14-45-8w4, which has been delayed by casing trouble at 1,864 feet, has been shut down for the winter. It may be abandoned at this depth, neither oil nor gas in commercial quantities having been encountered.

British Columbia

In British Columbia, drilling operations are again in progress, an American syndicate having carried a deep test of the Cretaceous formation to a depth of 2,600 feet. The location is on the lower course of Sage Creek, in the Flathead Valley, southwestern British Columbia, about 6 miles north of the international boundary. Before the war some drilling was done by the Flathead Oil Co. of Vancouver, which put down a couple of unsuccessful tests, but had to discontinue work owing to lack of funds and drilling difficulties. A very light oil is frequently collected from seepages in this district, but though there has been considerable drilling, no commercial production has been discovered.

In the Ontario fields, the Glenwood Natural Gas Co. producer on the Hugh Shanks farm, Romney Township, has been tubed, but has a baler lost in the hole. When this is recovered the well will be swabbed and later put on the pump. Union Natural Gas Co. No. 248, Truckenbrod farm, a half mile east of Port Alma, is working on casing. To the north, Union Natural Gas Co. No. 249, Mancell farm, is rigging up for a deep test.

INSTITUTE TO CONSIDER WIDER USE OF OIL

(Continued from Page 20)

he will tell of the progress of cooperative fuel tests made in the past year. "The Service Tests of Lubricants in Automotive Engines," presented by W. S. James of the United States Bureau of Standards, and "The Progress of Anti-Knock Fuels," by Thomas Midgley, Jr., chief engineer of the fuel section of the General Motor Corp., are also on Wednesday's group session program, while at the general session in the evening H. L. Horning, president of the Waukesha Motor Co., representing the Society of Automotive Engineers, will speak on "What the Automotive and Oil Industries Can Do for Each Other."

The largest attendance the Institute meetings have ever had is expected at next week's session. St. Louis is well provided with excellent hotel accommodations and the Statler Hotel, where the Institute will convene, is centrally located and well equipped to handle the big meeting.

The Annual Election

The Board of Councilors of the Institute will meet on Tuesday morning at 10:30 to nominate directors to fill the place of those whose terms expire this year. The new board of directors will meet at 12:30 p. m. and elect officers for the coming year and transact such other business as may come before it.

The Board of Councilors will be called upon this year to elect directors to fill vacancies in the Production, Manufacturing, Distribution, Transportation, Natural Gasoline, Foreign Trade and "At Large" groups and will give the Natural Gas division of the industry a place on the directorate by the election of a director to represent it.

The term of offices of the following members of the Board of Directors will expire this year: Production Group, M. L. Requa, California Oil Co., Pacific Coast; B. B. Brooks, Consolidated Oil Co., Rocky Mountain; Frank Haskell, Tidal Oil Co.; J. D. Collett, O'Keefe & Collett; F. C. Proctor and J. H. Markham, Jr., Central United States; J. C. Donnell, Ohio Oil Co., Eastern.

Manufacturing Group—E. W. Clark, Union Oil Co. of California, Pacific Coast; H. M. Blackmer, Midwest Refining Co., Rocky Mountain; E. E. Schock, Royal Refining Co., and George N. Moore, Moore Refining Co., Central United States; A. C. Bedford, Standard Oil Co. of New Jersey, Eastern.

Distribution Group—E. T. Wilson, Continental Oil Co., Rocky Mountain; Robert W. Stewart, Standard Oil Co. of Indiana; P. C. Crenshaw, Home Oil Co. C. L. Maguire, C. L. Maguire Petroleum Co., Central United States; A. P. Coombe, Standard Oil Co. of Ohio, Eastern.

Transportation Group, (Tank Car)—H. E. Felton, Union Tank Car Co.

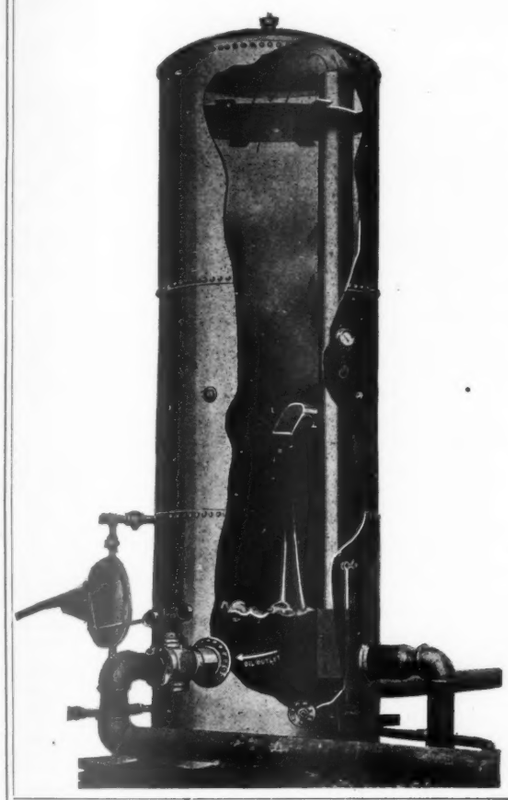
Natural Gas Group—This group has no representation on the board of directors but one director will be nominated and elected at this year's meeting.

Natural Gasoline Group—W. M. Welch, Tidal Refining Co.

Foreign Trade Group—Herbert L. Pratt, Standard Oil Co. of New York, E. L. Doheny, Mexican Petroleum Co.

At Large Group—Sheldon Clark, Sinclair Refining Co.; T. J. Gay, Gay Oil Co.; W. N. Davis, Mid-Continent Oil & Gas Assn.; E. C. Lufkin, The Texas Co.; E. B. Reeser, The Barnsdall Corp.; George P. Brockway, Seneca Oil Works; J. F. Lucey, Lucey Manufacturing Co.; Henry L. Doherty, H. L. Doherty & Co.; J. W. Van Dyke, Atlantic Refining Co.; H. F. Sinclair, Sinclair Consolidated Oil Corp.; Thomas A. Donnell, California Petroleum Co.

The officers of the American Petroleum Institute, whose successors will be elected at the annual meeting of the Board of Directors are: President, Thomas A. O'Donnell, California Petroleum Co.; vice presidents, R.D. Benson, Tide Water Oil Co.; Henry L. Doherty, Henry L. Doherty & Co.; J. W. Van Dyke, Atlantic Refining Co.; treasurer, H. F. Sinclair, Sinclair Consolidated Oil Corp.; secretary and counsel, R. L. Welch; assistant secretary and counsel, W. R. Boyd, Jr., assistant treasurer, Lacey Walker.



SMITH OIL AND GAS SEPARATOR

Its cost is normal and its length of life is indefinite, thus making the cost of separation of the oil and gas very small.

Smith Separator Company

Chestnut & Smith Corpn. Bldg.

TULSA, OKLAHOMA

"The Scope of Our Service"

Our business has outgrown the name so far that few people realize the scope of our service. For the Oil Industry alone we manufacture the following products:

Storage Tanks (any capacity)	
Stills	Blow Cases
Agitators	Filters
Condenser Boxes	Vapor Towers

Heat Exchangers	Loading Racks
Grease Kettles	Steel Buildings
Smoke Stacks	Still Bottoms
Walkways	Acid Tanks

Kansas City Structural Steel Co.

"Nearest the Field"

General Offices and Plant
21st and Metropolitan Ave.
Kansas City, Kansas

Sales Offices:
809 Daniel Bldg., Tulsa, Okla.
505 Huntzinger Bldg., Kansas City, Mo.

Announcing

—our—

Tulsa

Rental Branch

We are pleased to announce that we have opened a rental branch at 310 East Third Street, Tulsa, and that a complete stock of our fishing tools, including the DEVIL'S STEEL HAND and the DEVIL'S PITCHFORK will be carried.

Our rental branch manager is prepared to give prompt and efficient service at all times in connection with supplying fishing tools.

Devil's Pitchfork

Devil's Steel Hand

Every day new triumphs are being recorded by both the DEVIL'S STEEL HAND and the PITCHFORK. A recent example was in the Bristow Field when B. K. Maitland lost 2 underreamer lugs, the mandril, the spring and the key in the hole. He procured a DEVIL'S STEEL HAND and in 2 hours had fished out every piece.

So if you want to cut costs of your fishing jobs to the minimum, just give either of these tools a trial.

They can't be beat!

We also manufacture fishing tools for pumping wells and make special tools for odd fishing jobs.

BROWN WELDING & MACHINE CO.

Main Office and Factory: Breckenridge, Texas

Rental Branch: 310 East Third St., Tulsa, Okla.

California Representative:

J. F. Larkin, 811 Loews State Bldg., Los Angeles, Calif

101

MID-CONTINENT REFINERY RUNS INCREASE

(Continued from Page 23)

Yale Oil Corp., Yale	1,500	750	1,000
Total	365,500	125,825	117,925

*Shut down one year or longer.

REFINING OPERATIONS IN NORTH TEXAS

Name and location—	Daily Capacity	Runs Dec 1	Runs Nov. 1
American Oil Corp., Pioneer	2,500	300	400
American Refining Co., Wichita Falls	8,000	5,200	5,200
*Associated P. & R. (formerly Bankers), Iowa Park	2,000	Shut down	Shut down
Boner, H. E., Burkburnett	700	Shut down	Shut down
Bridgeport Refining Co. (formerly Associated P. & R.), Bridgeport	1,000	150	150
Buffalo Refining Co., Sherman	500	150	150
*Burk-Texas Refining Co (Revere), Burkburnett	1,200	Shut down	Shut down
*Bear Refining Co., Burkburnett	1,200	Shut down	Shut down
Clayton Oil & Refining Co., Dallas	3,500	2,000	2,000
Crystal Petroleum Co., Burkburnett	1,000	Shut down	Shut down
Dalford Oil and Refining Co. (Home Oil and Refining Co.), Fort Worth	5,000	Shut down	Shut down
De Leon Refining Co., De Leon	1,000	340	Shut down
Eastland Pioneer Oil & Refining Co. (formerly Liberty Refining Co.), Cisco	1,000	Shut down	Shut down
Empire Refineries, Inc., Gainesville	6,000	3,500	2,500
*General Oil Co. (formerly Power Ref.), Wichita Falls	750	Shut down	Shut down
*General Refining Co., Abilene	1,500	Shut down	Shut down
Gulf Refining Co., Fort Worth	15,000	5,000	5,000
*Gorman-Home Refining Co., Gorman	1,000	Shut down	Shut down
Home Refining Co., Swastika	1,000	100	350
Humble Oil & Refining Co., Burkburnett	1,500	900	1,200
Humble Oil & Refining Co., Powell	6,500	Under Const.	Under Const.
Interstate Gasoline Products Co. (formerly New Era Refining Co.), Iowa Park	2,000	950	1,000
Invincible Oil Corp. (Montrose), Fort Worth	5,000	Shut down	Shut down
Iowa Park Prod. & Ref. Co., Iowa Park	1,500	Shut down	700
Keystone Ranger Refining Co., Wichita Falls	2,000	Shut down	Shut down
Langley Refining Co., Burkburnett	1,500	Shut down	Shut down
Lone Star Refining Co., Wichita Falls	4,000	Shut down	Shut down
*Manhattan Pet. Products Co., Wichita Falls	2,500	Shut down	Shut down
Miller Petroleum Co., Wichita Falls	2,500	1,900	1,500
Magnolia Petroleum Co., Fort Worth	12,000	4,800	5,000
Megargil Refining Co., Megargil	1,000	600	400
Magnolia Petroleum Co., Corsicana	3,000	2,750	3,000
Mexia Oil & Refining Co., Mexia	600	200	200
Noble Oil & Gas Co., Burkburnett	5,000	3,000	3,000
*North Texas Refining Co., Greenville	1,000	Shut down	Shut down
*Owenwood Oil Corp., Burkburnett	2,000	Shut down	Shut down
Oriental Refining Co., Dallas	6,000	650	500
Oriental Refining Co. (Trinity), Dallas	3,000	Shut down	300
*Odessa Refining Co., Ranger	1,000	Shut down	Shut down
Orient Petroleum Co., Wichita Falls	2,000	600	Shut down
*Pierce Oil Corp., Fort Worth	10,000	Shut down	Shut down
Panhandle Refining Co., Wichita Falls	4,500	2,600	2,800
*Panther City Refining Co. (Western Oil Sales Co.), Fort Worth	2,000	Shut down	Shut down
The Petroleum Corp. (formerly Beaver-Electra Refining Co.), Electra	2,000	1,200	1,300
Primrose Refining Co. (formerly Abner Davis), Wichita Falls	1,500	500	400
Ranger-Wichita Refining Co., Wichita Falls	5,000	Shut down	Shut down
*Ranger Pipe Line & Refining Co., Ranger	2,500	Shut down	Shut down
Ranger Pipe Line & Refining Co. (operated by Hagaman Refining Co.), Tiffin	2,000	250	250
Skelly Oil Co. (formerly Nortex Ref.), Burkburnett	2,000	Shut down	Shut down
Star Refining Co, Fort Worth	1,500	400	300
State Refining Co., Dallas	1,000	Shut down	300
Sunshine State Oil & Refining Co., Wichita Falls	2,500	1,800	1,800
Tidal Western Refining Co., Burkburnett	3,000	1,700	2,000
The Texas Co., Dallas	16,000	7,500	7,500
*Texas Oil Products Co., Waxahachie	2,000	Shut down	Shut down
Texhoma Oil & Refining Co., Wichita Falls	4,500	3,600	3,500
*Texoil Refining Co., Burkburnett	1,500	Shut down	Shut down
Tiger Refining Co., Breckenridge	1,500	100	150
Transcontinental Oil Co., Fort Worth	5,000	800	1,200
Travis Refining Co., Burkburnett	1,000	500	400
Great Texas Refining Co., De Leon	700	Shut down	100
*Uniform Petroleum Co., Burkburnett	4,000	Shut down	Shut down
*Victor Refining Co., Burkburnett	2,000	Shut down	Shut down
*Virgin a Refining Co., Dublin	4,000	Shut down	Shut down
Waggoner Refining Co., Electra	3,400	2,500	2,500
Walker Consolidated Refining Co., Iowa Park	2,500	Shut down	Shut down
White Eagle Oil & Refining Co., Fort Worth	5,000	2,800	2,600
*Waco Refining Co., Waco	500	Shut down	Shut down
*World Refining Co., Bridgeport	800	Shut down	Shut down
Total	217,350	61,040	61,550

*Shut down one year or longer.

REFINING OPERATIONS IN KANSAS

Name and location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
*Associated Prod. & R. Co. (Tri-State), El Dorado	1,200	Shut down	Shut down
*Bell Prod. & Ref. Co., El Dorado	700	Shut down	Shut down
Commonwealth Oil & Refining Co., Moran	1,000	150	200
Derby Oil & Refining Co., Wichita	4,500	1,500	Shut down
El Dorado Refining Co., El Dorado	3,500	2,100	2,750
Frontier Refining Co., Hutchinson	2,200	Shut down	Shut down
*Fugatt Giles Corp., Wichita	300	Part. Dismtld.	Part. Dismtld.
Grant Oil Co, Augusta	1,000	650	750
Golden Rule Refining Co., Wichita	1,000	750	650
Gordon Ref. Co. (formerly Great Western Oil Co.), Florence	1,000	Shut down	Shut down
Great Western Ref. Co., Erie	1,200	Shut down	Shut down
*H. & H. Refining Co., Osawatomie	800	Shut down	Shut down
*Imperial Ref. Co. (formerly Uncle Sam Refining Co.), Cherryvale	1,000	Shut down	Shut down
Industrial Ref. Co. (formerly St. Louis Oil & Ref. Co.), El Dorado	1,400	700	Shut down
Interstate Refineries, Inc., Centropolis	1,000	Re-run	Re-run
Kansas-Texas Oil & Refining Co., Wichita	1,500	Shut down	Shut down
Kapotex Ref. Co., Arkansas City	3,500	2,600	2,600
Kansas Oil Refining Co., Coffeyville	1,500	Shut down	350
Kansas City Ref. Co., Kansas City	5,000	3,500	2,750
Lesh Refining Co., Arkansas City	2,000	Shut down	Shut down
Mecca Refining Co., Augusta	1,500	Shut down	Shut down
*Marshall & Co., Sheffield, Mo.	2,500	Shut down	Shut down
Mutual Refining Co., Chanute	1,000	Shut down	Shut down
Moore Refining Co. (Millikin), Arkansas City	6,000	2,100	2,250
McCree Petroleum Co. (formerly Central American Oil Co.), Baxter Springs	1,000	Shut down	Re-run
*McWhorter-Chanute Refining Co., Chanute	500	Shut down	Shut down
Miller Petroleum Co., Humboldt	2,500	1,400	Shut down
Mo-Kan Refining Co., Kansas City	1,200	Shut down	4,750
National Refining Co., Coffeyville	6,000	4,750	Shut down
*North American Refining Co., Rosedale	1,000	Shut down	2,750
Peerless Oil Refining Co., Chanute	3,500	2,600	350
Red Bird Refining Co., Fredonia	800	350	400
Richardson Refining Co. (Fidelity), El Dorado	2,500	350	Under Const.
Roxana Pet. Corp., Arkansas City	10,000	Under Const.	4,800
Sinclair Refining Co., Coffeyville	6,000	5,250	Shut down
Sinclair Refining Co., Argentine	7,000	6,500	9,500
Skelly Oil Co. (Midland Ref.), El Dorado	14,000	7,000	1,750
Sterling Oil & Refining Co., Wichita	5,000	1,750	Shut down
Standard Oil Co. of Kansas, Neodesha	12,000	7,000	

(Continued on Page 115)

"Why didn't someone think of that before?"

14" Ever-Grip Pipe Wrench | 12" Ever-Grip Nut Wrench | 10" Ever-Grip Nut Wrench | 10" Ever-Grip Pipe Wrench | 8" Ever-Grip Nut Wrench

That is what people always say whenever a fundamental idea is given form or a useful invention is made and that is what they are saying about the Ever-Grip Wrench.

It is so simple (there are only three parts), so obviously practical and convenient, and yet so much better than anything that has been brought out in the wrench line heretofore that people wonder why any other type of adjustable wrench was ever made or used.

The jaws of an Ever-Grip can be opened or closed or clamped onto an object by merely turning the handle. This makes it particularly effective in tight corners, for high reaches, or near moving machinery because only one hand is required to operate it and it hangs onto the pipe or nut until released by a twist of the wrist.

In addition to being exceptionally convenient and simple, Ever-Grip Wrenches are unusually strong—they are made of drop-forged, heat treated, harveyized steel, accurately machined throughout by expert mechanics according to the best modern practices and standards.

Write for Booklet No. 1-C for details concerning the Ever-Grip.

EVER-GRIP WRENCH CO.
129 S. La Salle Street
CHICAGO

EVER-GRIP WRENCHES

"They Never Slip"

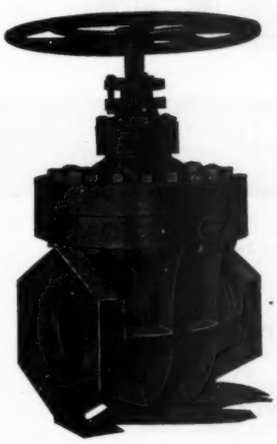
Cosden & Company

TULSA, OKLAHOMA

Manufacturers and distillers of high grade Gasoline, Naphthas, Lubricating and Illuminating Oils.

Unexcelled Producing—Refining Transporting Facilities

Ludlow Double Gate Valves



last longer and work better because there is less wear on the faces of gates and seats in opening and closing than in any other valve made.

If you are not already using these wonderful Ludlow Double Gate Valves, it will pay you to investigate. Send for prices.

THE LUDLOW VALVE MFG. CO.
(Established 1866)
Factory: Troy, N. Y.
Branch Offices: Kansas City, Mo.; Chicago, Ill.; Pittsburgh Pa.; Boston, Mass.

24

Safety! in Hazard Wire Lines—an Insurance Against Trouble—in oil well drilling.

Get the best results from Wire Rope by using

Hazard

WIRE LINES FOR DRILLING

Sold by the following Dealers

COLONIAL SUPPLY CO.
Henryetta, Okla.

CROTTY & CO.
Parkersburg, W. Va.

E. L. WHITNEY CO.
Tulsa, Okla.

PRICHARD SUPPLY CO.
Mannington, W. Va.

WALTER C. HILL
711 Midwest Bldg., Casper, Wyo.

BUCK & STODDARD
Union Oil Bldg., Los Angeles, Calif.

LONGHART SUPPLY CO.
First National Bank Bldg., Fort Worth, Texas

HAZARD MANUFACTURING CO.
General Office and Works: WILKES-BARRE, PA.

BRANCH OFFICES:
1625 South Troost Ave., Tulsa, Okla.

New York Pittsburgh Chicago Denver Birmingham

GULF COAST

(Continued from Page 48)

lic Production Co.'s No. 7 Dolbear is making 125 bbls. at 2,700 feet after being worked over. No. 43 is working over. No. 72 is rigging and No. 73 is drilling at 2,010 feet with a derrick up for No. 74. The last three are new wells. On the southwest side, the Gulf Co. is working over No. 10 Phoenix and on the south side the Sun Oil Co.'s No. 9 Carr is drilling below 1,850 feet.

In the Goose Creek Pool, the Humble Oil & Refining Co. is bailing No. 26 Peninsula at 4,500 feet, the Gulf Production Co. No. 6 Chapman-Bryan at 4,300 feet and the Gulf Coast-Crown Co.'s No. 38 Galliard joint at 2,800 feet. The Humble Co. is rigging No. 53 Smith and 1 Hogg Island. Its No. 10 Tabb is below 3,600 feet. The Gulf Production Co.'s No. 2 Hirsch in the bay is drilling at 1,100 feet, with No. 28 Beaumont in the bay and No. 8 Paddock starting. No. 4 Gillette is working over

The Texas Co.'s No. 272 Fee in the Sour Lake Pool, a work over, is pumping 25 bbls. at 2,400 feet and No. 268 fee is rigging to work over. In the Saratoga Pool, Paggi Bros. No. 3 Louis bailed salt water at 1,175 feet and is being drilled deeper. The Rio Bravo Oil Co.'s No. 83-B is drilling below 650 feet. In the Batson Pool, the Ada Bell Oil Co.'s No. 64 Parafine was abandoned in salt water at 1,150 feet. In the Spindletop Pool, Wilson-Broach No. 3 McFadden is drilling at 765 feet and the Rycade Oil Co.'s No. 2 McFadden, a deep test, is below 3,465 feet. In the Markham Pool, the Rycade Oil Co.'s No. 1 Myers is below 2,870 feet and No. 2 Hudson at 1,306 feet.

The Sun Co.'s No. 1 Ritter on the north side of the dome at Pierce Junction is below 2,900 feet and the Humble Oil & Refining Co.'s No. 6 Fitzsimmons is drilling at 2,565 feet on the east side. At Blue Ridge, the Mutual Oil Co.'s No. 1 Bute is below 2,345 feet. The Texas Co. is rigging No. 11 Robinson. Both are on the west side of the salt mass.

The Sinclair Oil & Gas Co. abandoned No. 7 Becker at Damon Mound and H. R. Cullen's No. 3 Ward there is drilling at 3,500 feet. At West Columbia, The Texas Co. is working over No. 53 Hogg and No. 1 Abrams.

In the Humble Pool, The Texas Co. and Galena-Signal Oil Co. are working over old holes on the Stevenson. The Callahan Oil Co. is drilling No. 1 Slaughter. The Four in Four Oil Co., Birney Oil Co., and others are working over old wells in the shallow and cap rock sections of the pool.

In the Milam County shallow sand section, the Texas Petroleum Co.'s No. 5 Neihaus is standing with 300 feet of fluid in the hole at 835 feet. W. C. Jennings has started No. 1 Branch and the Freddie Palmer Oil Co.'s No. 2 Sterlsky is drilling below 314 feet.

The deep test of the Producers Association in the old Nacogdoches Field is showing gas at 1,735 feet. The Southwestern Petroleum Co. is drilling at 1,900 feet, 2 miles north of Garrison. The America Oil Co. is setting casing in No. 1, near Hempstead in Waller County. The South Dayton Oil Co.'s No. 1, south of Liberty, Liberty County, is testing six feet of sand at 3,140 feet.

In the Vinton Pool, the Gulf Coast Oil Co.'s No. 5 Vincent got salt water at 1,900 feet and the Texas-Gulf Co.'s No. 3 Joint bailed the same at 2,375 feet. The Gulf Refining Co. is setting strainer in No. 30 Star at 2,400 feet. The Texas Co.'s No. 3 Gray is drilling below 1,980 feet and the Just Oil & Refining Co.'s No. 3 Lyons is below 1,624 feet. The Edgerly Petroleum Co.'s No. 1 Vincent is at 1,910 feet. The Tillery Oil Co.'s No. 1 Gray is at 2,765 feet. Marrs McLean has a deep test for that pool, drilling at 3,456 feet. It is No. 5 Gray. The Vinton Petroleum Co. is rigging No. 12 Rescue.

In the Jennings Pool, the Cowley Fuel Oil Co.'s No. 86 Fee is pumping 15 bbls. at 1,750 feet.

The test of the Vacuum Oil Co., near Westlake in Calcasieu Parish is fishing at 1,350 feet.

The Johnson Bayou Prospecting Co. (G. J. McManus, C. N. Scott and associates), has started a series of shallow tests for dome formation in Cameron Parish.

West Texas

Judging from leasing activities, the counties of Reagan, Crockett, Upton, Irion and others in the far western part of the State are due for considerable wildcatting by large interests. The land out there is in big blocks used for cattle ranges and thousands of acres have been acquired. Much of it is State owned, assigned to the University of Texas at Austin.

The territory has been the scene of more or less wildcat work in the past, especially following the Ranger boom, but interest was renewed last May when the Texon Land & Development Co. got a well on University land in Reagan County at 3,026 feet. The well flowed by heads for a time, making an average of 80 bbls., 38 gravity, colored green. There was considerable open hole. A string of 6⅝-inch casing was set and in August the well was placed on the pump and averaged 200 bbls. for a time. It is now averaging 173 bbls. per day, showing less than 10 per cent water, which water was carried on to the sand while the well was drilling and not entirely shut off by the casing.

Recently the Texon Co. sold the well and two drilling offsets together with 16 sections of land in a solid block to the Transcontinental Oil Co. The purchasers organized the Big Lake Oil Co., capitalized at $4,000,000 with a Delaware charter, the Texon Co. taking an interest in the new organization, of which Leri Smith, of Pittsburgh, Pa., is the president; Frank T. Pickrell, of El Paso and J. M. Holliday, vice presidents; E. C. Stearns secretary and L. G. Farquhar, treasurer. The Big Lake Co. has opened an office at San Angelo, Tex., while operations will be directed from the Fort Worth offices of the Transcontinental Co.

The Big Lake Co. will finish the two offsets and drill four more tests. Two tests will start before December 15. No. 5 University is located in Section 35, Block No. 1, south of the discovery well. Another location has been made two sections northeast of the well. In addition, the World Co. is starting a deep test in the northern part of Crockett County and the Texas Pacific Coal and Oil Co. has a location in Irion County, east of the well.

The Magnolia Petroleum Co. has 20,000 acres in Crockett County and reports from Austin and the west state practically all the major companies are represented on the acreage list in the counties named. Some of these leases are 50 miles from the well. Leases acquired from the State call for the payment of $1 filing fees for every four sections and an annual rental of 10 cents per acre. Land not coming within State control, but owned by individuals is booming, the ranch men asking a bonus of $2.50 per acre. Residents of Austin, who make a business of filing on the mineral rights on State lands have made handsome profits since the leasing activity started.

Other tests drilling in Crockett County include the Crockett Drilling Co.'s No. 1 Shannon below 1,800 feet and No. 1 Massey shut down at 510 feet. The Enders-Smith Co.'s No. 1 University is idle at 810 feet. In Loving County, the Ramsey Production Co.'s No. 1 Russell is fishing at 4,485 feet. In Hudspeth County, the Boole Oil Association's No. 1 Gardner is drilling below 1,500 feet.

Down in Brewster County in the Big Bend region, the Arco Development Co. is setting casing in No. 1 Kokernot at 3,760 feet. The Portland Oil Syndicate's No. 1 State is around 2,780 feet. The El Paso County, Burns and Knight No. 4 Fee is around 3,500 feet.

EASTERN FIELDS

(Continued from Page 56)

In Sardis district, Harrison County, the Clarksburg Light & Heat Co. has a fifth sand gasser at its test on the Oral Harbert farm. In the same district, J. W. Johnson made a location on the Fred Swiger farm. In Grant district, Ritchie County, the Continental Oil has a gasser in the Big Injun sand at a second test on the J. W. P. Cain farm. In the same district, O. C. Satterfield's test on the Newbrough farm is a 5-bbl. pumper in the Squaw sand. In Murphy district, Mellon Bros.' test, an old well, on the Rachel Ryan farm has been drilled down to the Big Injun sand and good for 4 bbls. a day. In Mannington district, Marion County, the Eastern Petroleum Co. has drilled down No. 3 on the O. N. Koen farm, showing for a producer in the Big Injun sand.

Duster in Ritchie County

In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co. has a duster in the Big Injun sand at a test on the J. P. Smith farm. It has been abandoned. In Center district, Tyler County, Pence & Schrader have a Big Injun sand gasser on the W. E. Doak farm. In Center district, Gilmer County, the Curtis Oil Co.'s No. 3 on the Lydie J. McKinney farm is a gasser in the Big Injun sand. In Sheridan district, Calhoun County, the Hope Construction & Refining Co.'s test on the Alonzo Buch farm is a fair gasser in the Big Injun sand. The Chartiers Oil Co. drilled its old No. 1 on the Baptist Church lot in Center district, Gilmer County, through the Big Injun sand and dry. In Carroll district, Lincoln County, the Columbia Gas & Electric Co.'s No. 385 on the J. F. Grass farm is a gasser in the Big Injun sand. In Union district, the United Fuel Gas Co. has a gasser in the same formation at a test on the Isaac Farley farm. The Superior Gas Co. has a gasser in the same sand at No. 1 on the E. E. Adkins farm. The Huntington Development & Gas Co. and the Cambridge Carbon Co. have gassers in the Big Injun sand at tests on the Smith and H. H. Scites farms.

On Leading Creek, Sheridan district, Calhoun County, the Clear Fork Oil & Gas Co. completed No. 3 on the G. W. Dye farm, good for 3 bbls. a day. In the same locality, the Grantsville Oil & Gas Co. has a duster in the same formation on the J. B. Dye farm. In the same district, the Richter Oil Co. has a rig completed for No. 6 on the B. S. Raybuck farm. The Hope Natural Gas Co. is due in the sand at a second test on the S. Snyder farm. In Simpson district, Harrison County, the Bridgeport Lamp Chimney Co.'s test on the Ralph Jones farm, is a duster in the fifth sand.

Drilling and Starting Tests

Drilling and starting test wells is still a feature in the old districts. In Center district, Wetzel County, the Hope Natural Gas Co. has reached a total depth of 3,150 feet at its test on the J. W. Loewe farm. Neither oil or gas has been encountered. On Indian Creek, Union district, Tyler County, Knowlton Bros. & Co. have placed the rig at a location on the H. C. Williamson farm. On Indian Creek, Murphy district, Ritchie County, the Hope Natural Gas Co. has started to drill on the J. C. Williams farm. On the Divide between Laurel Run and Straight Creek, E. E. Pope has the rig completed for a second test on the C. W. Kemp farm. On Yellow Creek, Center district, Calhoun County, A. H. Jackson has the rig completed on the Edward Jackson farm. In Central district, Doddridge County, the Hope Construction & Refining Co. has started to drill on the Robert A. Smith farm. In Southwest district, the Buelah Oil & Gas Co. has a rig up on the John Gray farm. In Curray district, Putnam County, the St. Albins Gas Co. has a rig up on the Noah Wheeler farm. The Laurel Development Co. is due in the sand on the Big Injun sand on the Maude Browning farm in Carroll district, Lincoln County. In the same district, the same company is drilling on the Elizabeth Mahone farm. In Jefferson district, the Bear Branch Gas Co. is drilling on Spencer Hill farm.

Braxton County

In Otter district, Braxton County, the West Virginia Central Gas Co. is due in the sand on the Andrew Fried farm. The Hazel Atlas Gas Co. is down 900 feet on the W. O. Priest farm. In Birch district, the West Virginia Central Gas Co. has rig material at a location on the Ward Garee farm. In Malden district, Kanawha County, the Allegheny Oil & Gas Co. has a rig up on the Armeda Lacy farm. In Sherman district, Boone County, G. L. Cabot is drilling on the White farm. An important test, owned by Zonheimer & Gibbs, located on the Cole-Crane tract in Logan district, Logan County, is drilling at 2,200 feet. In the same district, the Wacatock Producing Co. is rigging up on the Dingess Coal Co.'s tract. In Scott district, Boone County, the Shields Oil & Gas Co. has a duster on the Hopkins farm.

Southeastern Ohio

Development work in the southeastern Ohio fields was in marked contrast to the previous week when the completed list contained quite a number of good producers. The week showed quite a number of completions, for the most part in shallow territory, but none better than light pumpers. In Knox and Noble Counties operators are keeping up an active drilling campaign and meeting with about the usual results.

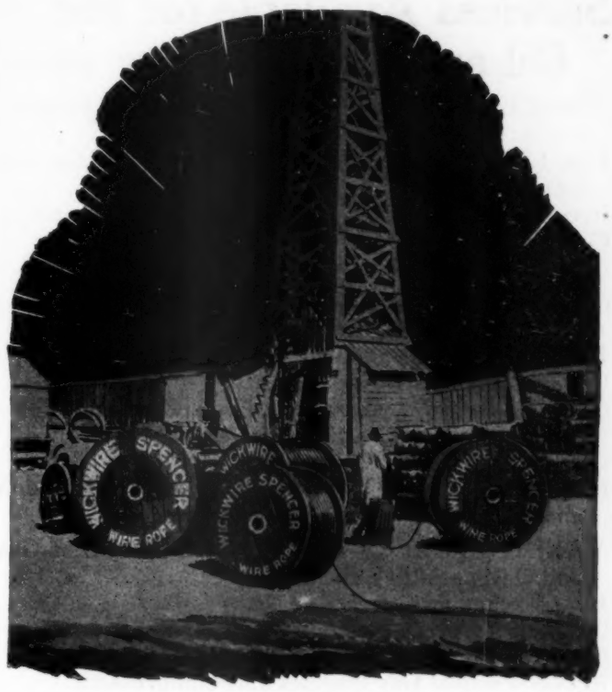
In the Big Lime development in Franklin Township, Licking County, W. W. and A. T. Wehrle drilled their test on the W. G. Meacham farm through the Big Lime formation, showing for a 20-bbl. producer. In Madison Township, Spindler & Donaldson got a 7-bbl. pumper when they drilled No. 5 on the C. A. Bounds farm through the Berea grit. In Section 3, Clay Township, Knox County, Cora Clark completed and shot in the Berea grit, her No. 3 on the Grover Hoss farm, a 3-bbl. pumper. In the same township, the A. H. Heisey Co. completed and shot in the Berea grit a test on the C. S. Green farm, a light gasser, about a quarter of a million feet a day. In Jefferson Township, Noble County, E. E. Vorhees & Co. have a very light pumper in the Buell Run sand at a test on the S. M. Williams farm. A second test on the same farm is good for 3 or 4 bbls. a day in the same formation.

Deep Sand Dusters and Pumpers

The deep sand territory made a very poor showing. In Section 10, Rush Creek Township, Fairfield County, the Montana Oil & Gas Co.'s second test on the Charles Young farm is not good for more than 5 bbls. a day. In the same section, the Carter Oil Co.'s second test on the M. Caputi farm, is dry in the Clinton sand. In Section 2, Ruff & Stewart have a very light show of oil at their test on the D. S. Miller farm, 600 feet south of the Carter Oil Co.'s test on the Householder farm. In Jackson Township, Knox County, the Ohio Fuel Supply Co.'s test on the Oliver Griffen farm, 1 mile north of the same company's test on the W. Scott Beaty farm, is a duster in the Clinton sand.

In the Newport district, Newport Township, Washington County, the Pleasents County Bank drilled No. 14 on the A. B. Little farm through the Keener sand, a 3-bbl. pumper. In Independence Township, the C. E. Hammond Estate has a 2-bbl. pumper at No. 7 on the Sophia A. Roe farm. In Madison Township, Licking County, Spindler & Donaldson are drilling No. 5 on the C. A. Bounds farm. In Washington Township, Monroe County, Harry Binegar & Co. completed in the Berea grit a test on the Elem Briggs farm, a good gasser. In Section 10, Rush Creek Township, Fairfield County, the Montana Oil & Gas Co. started to drill a test on the S. B. Nixon farm. In Washington Township, Hocking County, the Pierpont Oil & Gas Co. is drilling a second test on the O. F. Pierpont farm. In Section 12, Washington Township, Monroe County, Harry Binegar & Co. have a Berea grit gasser at a test on the Elem Briggs farm.

The Davis Oil & Gas Co. has now drilled its No. 3 on the G. J. Davis heirs'



Wickwire Wire Lines

We know that our wire lines are of first quality throughout because they are Wickwire Made from the mines to the finished product. They are constructed to withstand the most severe use and can be depended upon where there is a premium on speed and reliable service.

CARRIED AT THE FOLLOWING POINTS FOR THE PETROLEUM INDUSTRY

Bradford, Pa.
Bristow, Okla.
Buffalo, N. Y.
Burbank Field, Okla.
Butler, Pa.
Cleveland, Okla.
Cushing, Okla.
Emlenton, Pa.
Knox, Pa.
Marland, Okla.
Morrison, Okla.
Madison, Kansas
New Martinsville, W. Va.
Okmulgee, Okla.
Pawhuska, Okla.
Ponca City, Okla.
Tulsa, Okla.
Washington, Pa.
Waynesburg, Pa.
Weleetka, Okla.
Woodsfield, Ohio
Yale, Okla.

DISTRIBUTORS

Clarion County Machine Co., Knox, Pa.
Afkeck & Co., Butler, Pa.
Lloyd Smith Co., Bradford, Pa.
H. B. Mitchell Co., Emlenton, Pa.
New Martinsville Supply Co., New Martinsville, W. Va.
Murray Tool & Supply Co., Tulsa-Cleveland, Okla.

WICKWIRE SPENCER STEEL CORP.
41 East 42nd St., New York

Services Available for the Oil and Gas Industry as—

CONSULTING ENGINEERS in all matters pertaining to:
Pipe Line Transportation of Petroleum and Natural Gas.
Recovery of Gasoline by Absorption or Compression.
Compressing and Booster Plants.
Gas Engines and Compressors.

CONSTRUCTING ENGINEERS and CONTRACTORS, specializing in:
Pipe Lines for Gas and Oil.
Compressing and Booster Plants.
Gasoline Recovery Systems, Absorption and Compression.
City and Inter-City Gas Mains.
No Contract too large to complete with satisfaction and dispatch or too far away to handle.

MANUFACTURERS and DISTRIBUTORS of Gas and Oil Specialties, including:
Heat Exchangers.
Gasoline Recovery Equipment.
Compressing and Booster Station Equipment.
Reeves Vertical Gas Engines and Compressors.
Hope Biplane Compressor Valves.
Hope River Clamps and Re-inforced Joints.

Consulting and Contracting Engineers in Natural Gas and Oil

HOPE ENGINEERING & SUPPLY CO.
Mt. Vernon, Ohio, U.S.A.

Branches Pittsburgh, Penna. Tulsa, Okla. Casper, Wyo.

FUEL OIL — GAS OIL — KEROSENE — GASOLINE

Getting Deliveries On Time

It always puts a smile on your face to have your oil come rolling in on time, doesn't it?

That smile of satisfaction is considered a prerogative of every Spencer customer. It MUST go with each order even tho it necessitates (as it ofttimes does) the burning of midnight oil.

Maybe you are getting that kind of service. If not, it is high time you wired us your next order. Why not try it!

"Conscientious Oil Marketing Guided by Years of Experience"

SPENCER PETROLEUM CO.
All Petroleum Products

CHICAGO
1333 Peoples Gas Bldg.
Wabash 5181-2-3

STABILITY SPENCER SERVICE OILS SATISFACTION

KANSAS CITY
700 Orear-Leslie Bldg.
Harrison 6180-81
Long Distance 65

TULSA
1039 Kennedy Bldg., Osage 857
Long Distance 37

144

farm through all sands and dry. To make this a complete test it was drilled through the Bayard sand. In the old Duff City Field, Harbison & Co. drilled their test on the Downey heirs' farm into the Boulder formation. It is a fair gasser. In Chippewa Township, Beaver County, Joseph R. Edwards & Co. have a very light pumper at No. 5 on the Elmer E. McDevitt farm.

In Morris Township, Greene County, the Greensboro Gas Co. has started to drill a test on the Thompson heirs' farm. In Springhill Township, Boundy Bros. & Co. are drilling on the George Keffer farm. In Gilmore Township, the Peoples' Natural Gas Co. started to drill on the James E. Rice farm. In Richhill Township, the Natural Gas Co. of West Virginia is drilling on the Seth Webster farm. The Manufacturers Light & Heat Co. has started to drill on the A. J. Smith farm.

Pumper in Washington Township

In Washington Township, Greene County, the Waynesburg Home Gas Co. has a 10-bbl. pumper in the Gordon sand at a test on the D. F. Brown farm. In Franklin Township, Frank Black & Co. have a gasser in the Gordon sand at a second test on the R. H. Orndoff farm. In Center district, the Carnegie Natural Gas Co. completed a 5-bbl. pumper in the Gordon sand at a test on the W. L. Scott farm. In Center and Richhill Townships, the Manufacturers Light & Heat Co. completed No. 1 on the Russell Anderson and A. Lyons farms. Each is good for 1,500,000 feet a day. The Philadelphia Gas Co.'s second test on the James Powell farm in Wayne Township, is completed and a fair gasser in the fifth sand at a total depth of 3,250 feet.

CHICAGO MARKET STILL OPTIMISTIC

(Continued from Page 88)

stocks of kerosene at refineries. This has aided that commodity at the expense of straw distillates and gas oil. With the surplus gone kerosene should be comparatively hard to get for several weeks, particularly in view of additional export orders. The same cannot be said for gas oil and distillate, however, they having developed no appreciable export interest to date. Kerosene is being offered at 4½ cents over December. Gas oil is expected to be in greater demand soon for cracking in refineries. It will be aided by cold weather also, as will distillate.

Fuel oil was aided by reports that the Santa Fe had entered the market and was buying all the available material along its tracks. This created a shortage in that region with accompanying strength in other areas. The steel mills are tardy about making purchases, but they are displaying curiosity and along with other railroads and many additional industries are ready to buy. The fuel oil situation looks bright. It is thought by most men that the bottom has been reached and many buyers, waiting to confirm this opinion, will grab all available material soon.

The demand for Oklahoma lubricants remained at the status explained recently in The Oil and Gas Journal. The primary interest has been centered about the zero cold test Gulf Coast lubs for winter use. There has been no particular weakening in Oklahoma lubricants outside of the decreased demand reported last week, but there is no great interest in them on the other hand. Most refiners were still sold up over a long period on wax which was stronger.

Cosden & Co. was reported rerunning a large amount of the 56-58 summer grade gasoline held over from last summer. This company was generally conceded to be making it the basis for 64 gravity gasoline and kerosene for export. Increase in runs to 27,000 bbls. daily by this company is pointed out as indicative of the upward trend of the refined market.

Many oil men anticipate an increase in the price of Pennsylvania and eastern crudes about January 1, 1924. They argue that Oklahoma oils will be boosted shortly thereafter and that an increase in tank wagon structure can be anticipated in 60 to 90 days. Others assert that the unforseen possibilities attendant on all branches of the industry prohibits such predictions, and they look for a much slower ascent.

CENTRAL WEST

(Continued from Page 52)

Amallwood farm, while Johnson and others got a dry hole on the Addison Foley farm, and are drilling another well on the S. Flannery farm. The Petroleum Co. is drilling No. 2 D. C. Manius farm, and No. 1 on the Tom Lynch farm.

In Morgan County, the Petroleum Exploration Co. has drilled in an average gas well on the J. H. Osborne farm, the well showing 465,000 feet.

In the North Weir Field of Lawrence-Johnson Counties, the Union Gas & Oil Co. reports no new completions for the week.

GASOLINE OUTPUT UP; REFINING STOCKS LESS

Production of gasoline in October, according to the Bureau of Mines' report, attained a new record, 659,060,576 gallons, a daily average of 21,260,018.

Domestic demand showed a decrease of nearly 6 per cent. The total demand, domestic and exports, was 704,894,451 gallons, a daily average of 22,738,521 gallons.

The gasoline in storage October 31 amounted to 41.6 days' supply at the October rate of demand. Stocks on hand at refineries October 31 were 946,872,683 gallons, a decrease of 25,832,149 gallons.

Kerosene production was 191,346,325 gallons, a slight decrease from September, and 11 per cent less than a year ago.

Gas and fuel oil output in October was 1,069,800,191 gallons, an increase of 37,000,000 over September. Domestic demand increased 92,000,000 gallons. There were 1,436,591,014 gallons on hand at the end of the month.

The same number of refineries were operating as in September; 250 plants with an aggregate daily crude oil capacity of 2,148,232 bbls., running to refinery stills a daily average of 1,642,068 bbls. of foreign and domestic oil, and operating at 76.5 capacity, an increase of 1 per cent.

DOHENY DEFENDS LEASE BEFORE INVESTIGATORS

(Continued from Page 19)

in California, Mr. Doheny declared, was planning an immediately issue of $10,000,000 in bonds to finance drilling there during the next year and expected to expend up to $50,000,000 in a few years.

"What will you make in profit on the lease?" asked Senator Lenroot, Wisconsin.

"We will have bad luck if we don't make $100,000,000."

Mr. Doheny explained, however, that this was a gross profit and would comprise the various profits to be made on each of the transactions between drilling and sale to the retail trade, through the many years he expected the lease to run. He estimated that "half the final sale price" of oil was profit.

Drilling Offsets

Citing instances in which delay in drilling offset wells had caused great loss to owners of oil property, Mr. Doheny said his own company suffered more than one such experience.

The agreement with private owners to give six months' notice of offset drilling did not protect the Government, he asserted, since the supervising department would be unable to prepare for operation as fast as the private companies, and so would lose the benefit of being first into "oil sand." He said the Pan-American Co. is now carrying 4,000,000 barrels of oil to be kept in storage 15 years for the Government.

The loss to the Navy by beginning its

offset wells in naval oil Reserves Nos. 1 and 2 long after wells on private adjacent land were drilled, he said, will be 200,000,000 barrels. This resulting not only from the loss of oil drained by private wells, but because of loss of gas pressure which will forever prevent the recovery of much oil.

"When the gas pressure is decreased," he said, "the oil tends to solidify in the form of bitumen and asphaltum. There were once vast oil fields," he said, "about San Francisco, but the escape of gas long ago caused this oil to solidify. All except one well in Reserves Nos. 1 and 2 now require pumping."

To Mine Future Oil

"Some day," he said, "the bitumen and asphaltum in California will be recovered by mining operations and treated to obtain petroleum. The recently advertised German process for obtaining petroleum from asphaltum," he said, "are not new in this country." Speaking of the importance of gas pressure, he said his own success in California had resulted from the fact that he got his wells down to oil sands before others and the rush of gas established permanent channels for the flow of oil to his wells before the gas pressure was lessened. That was an advantage that could never be overcome by wells drilled even a month later. He said he had 210 wells in California and about 60 in Mexico.

Mr. Doheny explained his contract with the Navy for building storage for oil in Pearl Harbor and said he had only taken that contract to help the Navy and not a penny of profit was realized from it. Considering the amount, his bid was below the next highest bidder, the amount of money he had saved by having the work done cheaper than estimated and had turned back to the Government and the price at which the Navy obtained its fuel oil, he had in that transaction saved over $1,000,000 for the Navy. The only profit he had in the entire transaction was from the freight charge of 48 cents a barrel in his tankers from San Francisco to Pearl Harbor.

When the Government eventually has to drill offset wells throughout Reserve No. 1, the entire undertaking will cost $100,000,000.

Less Oil and More Money

"I think the price of oil will go up," said Mr. Doheny. "In the future there will be less oil and more money." He said he had never believed oil was being exhausted as many people predicted five or six years ago.

Admiral John K. Robinson, chief of the Bureau of Engineering, Navy Department, took all responsibility for the drilling of Teapot Dome and said Secretary Fall knew nothing of the plan until he called it to his attention. He said the Navy Council approved the transfer of the drililng operations and the making of a contract with the Interior Department.

Admiral Robinson said the cost of the proposed storage facilities, as contemplated in the lease of Reserve No. 3, in Wyoming, to the Sinclair interests, varied in different localities, but "will not be far from 50-50, that is, one barrel of oil in payment for one in storage." He said the plant at Newport, R. I., to care for 1,500 000 barrels was the next on the Navy's program, the cost being estimated at $1 per barrel of stored oil.

"The witness defended the provisions of the Sinclair lease which provided for construction of pipe line and storage facilities as part of the compensation to the Government. He estimated that the storage installation on the Pacific Coast would hold 47.000,000 barrels, while the whole construction program would cost the lessor $100,000,000.

Production of Reserve

Director H. Foster Bain of the United States Bureau of Mines, analyzed the Sinclair lease of the Wyoming oil reserve for the committee and gave latest statistics as to the results of that agreement. To October 31, 1923, he said, the reserve had produced 922,655 bbls. of oil, of which the royalty averaged 16½ per cent. He estimated the Government had received $1,480,000 more for its oil under the lease than if it had been disposed of at the prices which prevailed in that field.

MID-CONTINENT REFINERY RUNS INCREASE

(Continued from Page 110)

*Tuxedo Oil & Ref. Co. (formerly Blue Ridge), Wichita	1,000	Shut down	Shut down
Vickers Petroleum Co., Potwin	1,800	1,300	1,400
White Eagle Oil & Ref. Co., Augusta	7,500	5,000	6,750
Wilhoit Refining Co., Joplin, Mo.	1,500	900	800
Total	131,100	58,200	46,300

*Shut down one year or longer.

REFINING OPERATIONS IN ARKANSAS

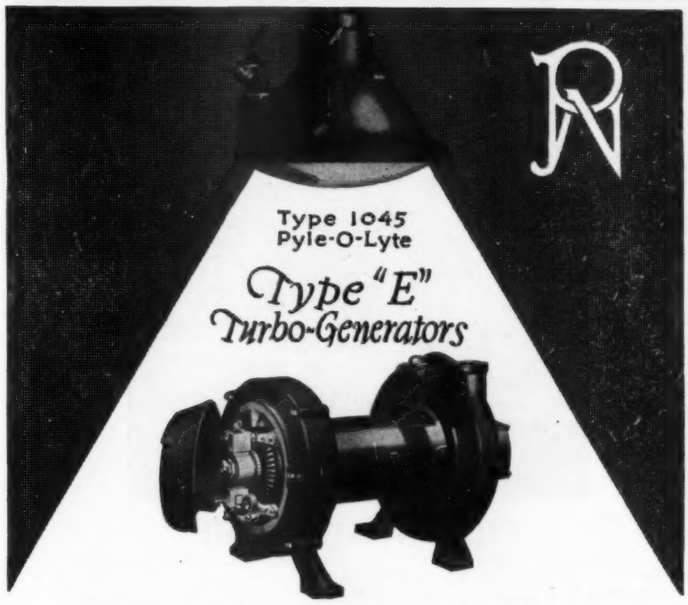
Name and location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
*Airedale Ref. Co., El Dorado	1,000	Shut down	Shut down
Arkansas Oil & Ref. Co., Fort Smith	1,000	Shut down	Shut down
Arkansas Refining Co., Picron	3,000	Shut down	Shut down
El Dorado Ref. & Pipe Line Co., El Dorado	1,500	Shut down	Shut down
Farmers Oil & Ref. Co., Texarkana	750	150	200
Grison Refining Co., El Dorado	750	200	150
Home Refining Co., Hot Springs	500	150	100
Jones & Co., R. C., El Dorado	1,000	150	200
Kettle Creek Ref. Co. (formerly Red River Ref. Co.), Pearson	4,000	3,200	3,000
Lion Oil & Ref. Co., El Dorado	12,000	6,000	7,500
McMillan, Fehlman & Oliver (operating New Ark Refining Co., El Dorado	1,500	Shut down	Shut down
National Pet. Prod. Co., El Dorado	1,500	Shut down	Shut down
Pine Bluff Refining Co., Pine Bluff	1,000	Shut down	250
Root Refineries, El Dorado	3,000	2,000	1,500
Shippers Pet. Co., El Dorado	700	Shut down	Shut down
Union Pipe Line & Ref. Co., El Dorado	4,000	Shut down	Shut down
Ouachita Valley Ref. Co., El Dorado	1,500	750	1,000
Total	37,950	14,400	13,750

*Shut down one year or longer.

REFINING OPERATIONS IN NORTH LOUISIANA

Name and location—	Daily Capacity	Runs Dec. 1	Runs Nov. 1
Caddo Central Oil & Ref. Co., Shreveport	3,500	3,500	3,000
Caddo Central Oil & Ref. Co., Shreveport	7,000	5,000	5,000
*General Oil & Ref. Co., Oil City	2,000	Shut down	Shut down
*General Oil & Refining Co., Homer	1,000	Shut down	Shut down
*Great Southern Prod. & Ref. Co., Ardis	2,000	Shut down	Shut down
*Homer Refining Co., Homer	250	Shut down	Shut down
*International Oil & Ref. Co., Shreveport	800	Shut down	Shut down
*Leestone Refining Co., Shreveport	800	Shut down	Shut down
Louisiana Oil Ref. Corp., Shreveport	9 000	4,000	5,000
*Louisiana Pet. Prod. Co., Bossier	3,000	Shut down	Shut down
*Paramount Refining Co., Vivian	3,000	Shut down	Shut down
*Paramount Petroleum Co., Superior	3,000	Shut down	Shut down
Red River Refining Co., Crichton	1,800	Shut down	Shut down
*Rogers Refining Co., Shreveport	700	Shut down	Shut down
Shreveport Prod. & Ref. Co., Shreveport	4,500	4,000	3,000
*Sunset Refining Co., Plaquemine	600	Shut down	Shut down
The Texas Co., Ardis	4,000	4,000	4,000
*Union Ref. & Pipe Line Co., Oil City	1,000	Shut down	Shut down
*Union Ref. & Pipe Line Co., Homer	1,000	Shut down	Shut down
Total	48,950	20,500	20,000

*Shut down one year or longer.



You Can't Beat This Lighting Combination—

Pyle-O-Lytes

With Pyle-National

Turbo-Generators

YOU know the Pyle-National Turbo-Generator—sturdy, compact; built to render a continuous and dependable service under all conditions and all kinds of treatment.

The difference between good and poor lighting may mean the difference between profit and loss in your operations. Don't take a chance—the ***PN*** Turbo-Generator has been standard equipment for 25 years where lighting requirements are most exacting.

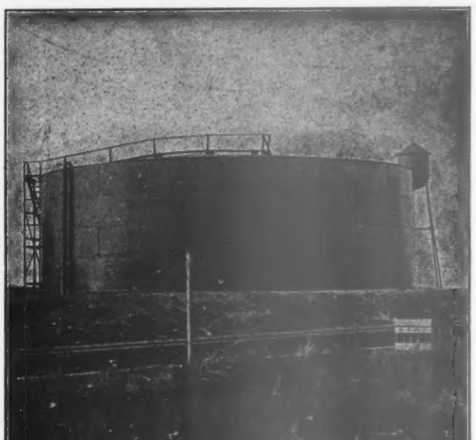
Pyle-O-Lytes for floodlighting bear the same stamp of approval. They are flooding hundreds of drilling operations with clear, mellow light, speeding up the work, cutting lighting costs, and keeping the men happy. Put them to work on **your** job; they'll pay for themselves repeatedly.

Supply houses everywhere carry Pyle-National equipment in stock; get in touch with the one closest to you, or write to us for special booklet on oil well lighting.

The PYLE-NATIONAL COMPANY

CHICAGO

PYLE-O-LYTE TRADE MARK PYLE-NATIONAL COMPANY REGISTERED



STOP WASTING OIL

Tight steel roofs on your oil storage tanks reduce evaporation losses by 70%. The average annual losses where leaky roofs are used amount, according to U. S. Bureau of Mines Bulletin No. 200, to 2% to 3% of the volume where crude oil is stored and 4% to 5% for gasoline. The portion evaporated from crude oil in storage is in reality not crude oil but merchantable gasoline.

Can you afford to stand this loss year after year? Would it not be better to use Pittsburgh-Des Moines tight storage tanks than the ordinary leaky roofs? $\frac{1}{16}$" steel roofs caulked gas-tight by the Pittsburgh-Des Moines method will save 60 to 70% of this loss—enough, even at present prices of oil, to pay for the cost of the roof the first year!

Fabricators and erectors of all kinds of steel tanks for oil or gasoline storage; also oil stills, agitators, etc. Inquire for details. We gladly quote, without obligation, on steel tanks of any capacity. Ask for our new Oil Tank Catalogue No. 77. Write our nearest office.

PITTSBURGH-DES MOINES STEEL COMPANY

1277 Praetorian Bldg., Dallas, Tex. 377 Rialto Bldg., San Francisco, Calif.
977 Tuttle St., Des Moines, Iowa 877 Curry Bldg., Pittsburgh, Pa.

a reinforced center sill

456,000 ft. lbs. stronger than the type sill in general use, and constructed materially lighter. Patented and used only in "Pennsylvania" Tank Cars.

THE PENNSYLVANIA TANK CAR COMPANY
(Builders of Tank Cars)

Pennsylvania Car Company
(Railway Cars Built, Rebuilt and Repaired)

Pennsylvania Tank Line
(Lessors of Tank Cars)

Sharon, Pennsylvania

New York St. Louis Kansas City Tulsa Houston
San Francisco Beaumont Casper

MEXICO FIELDS

(Continued from Page 48)

at the very shallow depth of 1,470 feet, came in looking like 8,000 bbls., but, which quickly went to salt water. Its shallow depth would lead to the conclusion that it might prove a stripper. The failures at Panuco can be listed as follows: East Coast Oil Co.'s No. 45 Los Potrerillos, is a salt water well at 2,360 feet. International Petroleum Co.'s No. 7 Tanchicuin, a duster at 2,237 feet. Empire Gas & Fuel Co.'s No. 1, Lot 21, West Maguabes, is a dry hole at 2,457 feet. Reverting to producers, however, The Texas Co.'s No. 10, Lot 17, Lomas y Llanos, was a surprise when it came in for 2,000 bbls. at 2,230 feet.

In the South Fields, Huasteca Petroleum Co., (Mexican Petroleum), has a nice 4,000-bbls. well in its No. 10-A Juan Casiano, which was completed at a sub-sea level of 1,791 feet; while its No. 20 Tierra Blanca, is rated at 1,000 bbls. at a sub-sea level of 2,040 feet.

It cannot be said that Caracol, which is just west of Tampico, looked any brighter when Hummel & Frix, with their No. 3, Lot 51, proved a duster at 2,503 feet.

In sum it might be remarked that Panuco's contribution to new potential production was 35,700 bbls., which, in part, was offset by some further pinch downs owing to salt water. The South fields added 5,000 bbls. to its production column.

Panuco-Cacalilao

In the Cacalilao sector of the Panuco Pool, drilling operations can be best epitomized as follows: La Corona Petroleum Co.'s No. 44, Lot 4, is drilling in the limestone at 1,705 feet; No. 45, same, is in shale at 610 feet; No. 46, same, is drilling at 1,125 feet in shale; and over in Lot 1, No. 47 is rigging, and in the same lot No. 33 is spudding; No. 31, same, is drilling in the limestone at 2,000 feet; No. 43, same, is fishing for tools at 1,905 feet in the lime. Mexican Gulf Oil Co.'s No. 35, Lot 1 Cacalilao, is drilling the limestone at 1,984 feet, and No. 37, same lot, is drilling at 1,835 feet with a showing of 200 bbls., which looks as if it might prove a well. International Petroleum Co.'s No. 24, Lot 5, is showing 500 bbls. as the drill descends at 2,130 feet, which might probably mean a good well here. Its No. 29, over in Lot 3, is drilling in shale at 1,095 feet; No. 30, same, is cementing 10-inch in gray shale at 1,080 feet. In Lot 4, International's No. 44, is drilling in blue shale at 455 feet. Mexican Sinclair Petroleum Corp's No. 15, Lot 3, is drilling at 1,738 feet in a limestone, with a showing of 500 bbls. Its No. 22, same, is drilling in the San Felipe at 1,175 feet; No. 33, same, is drilling at 1,780 feet in a limestone, and in Lot 2, No. 36, is drilling 930 feet, in shale. Transcontinental Petroleum Co.'s No. 36, Lot 4, is drilling at 1,560 feet; No. 51 in Lot 1, is drilling in shale at a nominal depth; No. 54, Lot 4, is drilling in the San Felipe at 1,450 feet; No. 55, same, is drilling in shale at 495 feet; No. 56, same, is drilling a similar formation at 1,300 feet; No. 59, same, is drilling at 275 feet, in shale. Up in Paciencia, to the north, its No. 3 is drilling at 1,965 feet in shale. Other Cacalilao tests are generally unchanged since the last report.

Panuco Old Sector

In the older sectors of the Panuco Feld, drilling operations are as follows: La Corona Petroleum Co.'s No. 78 Salvasuchi, is drilling in limestone at 1,550 feet; No. 81 San Manuel, is drilling in limestone at 1,255 feet. East Coast Oil Co.'s No. 431 Ingenio, is drilling at 400 feet in shale. Mexican Atlas Petroleum Corp. No. 5 Juarez, is drilling in limestone at 1,095 feet. New England Fuel Oil Co. No. 8 Cruz, is drilling at 1,485 feet in limestone. Sol Oil Co. No. 2 Tanchisol (federal zone), is drilling at about 1,410 feet in limestone. Transcontinental Petroleum Co.'s No. 14 Barbarena, is drilling in shale at 875 feet.

In the South fields, Huasteca Petroleum Co.'s (Mexican Petroleum), No. 29-A Cerro Azul, is drilling at 2,650 feet in brown shale; No. 35, same, is continuing to redrill in shale at 445 feet; No. 36, same, is rigging. Down in Tierra Blanca, Huasteca's No. 21 is drilling in brown shale at 1,470 feet. Up in Tres Hermanos its No. 3-A is drilling in brown shale at 3,180 feet, and No. 6, same, is cementing 6-inch casing in gray shale at 2,925 feet. Its other active tests are unchanged since the last report. La Corona Petroleum Co.'s No. 1, Lot 30, Comales, is drilling in gray shale at 1,175 feet; No. 2, Los Cues, is drilling at 1,590 feet, in shale. Cortez Oil Corp's No. 3, Lot 189 Amatlan, is drilling in shale at 995 feet; No. 5, Lot 148 Amatlan, is drilling in shale at 350 feet. International Petroleum Co.'s No. 41 Toteco, is drilling in a limestone at 2,044 feet; No. 42, same, is drilling in a similar formation at 2,170 feet. Down in San Miguel, south of the Tuxpan River, its No. 2 is drilling in the San Felipe at 2,770 feet. Island Oil & Transport Corp.'s No. 6, Lot 177 Amatlan, cemented 8-inch casing at 2,110 feet in the San Felipe. Mexican Gulf Oil Co. No. 38, Lot 190 Amatlan, is drilling at 1,125 feet in shale. Penn Mex Fuel Co. No. 2 Palo Blanco, is drilling at 2,530 feet in a sandy shale; No. 2 La Pita is drilling at 287 feet in blue shale, and No. 22 Alamo is drilling at 1,810 feet in blue shale. Mexican Eagle Oil Co.'s No. 8 Palma Sola has cemented 10-inch at 1,170 feet in a gray shale. Up in the Los Naranjos district, Mexican Eagle's proposed deep test. No. 24, Lot 132 Amatlan, is again fishing at 2,519 feet. In its No. 29, Lot 131 Chinampa, it is drilling in shale at 1,780 feet. In its No. 30, Lot 120 Amatlan, it is drilling in gumbo and shell at 945 feet. In its No. 24 Zacamixtle, Lot 198 Amatlan, it is drilling at 1,920 feet in possibly the San Felipe.

Topila and Miscellaneous

In the Topila Pool, Cortez Oil Corp.'s No. 1, Lot 52 Lagartero, is drilling at 2,035 feet in a gray shale. La Corona Petroleum Co.'s No. 18 Topila is drilling in a lime shell at 2,177 feet. A newcomer in the field is Mason & Co., which is rigged for a test No. 1, Lot 19 Topila. National Oil Co.'s No. 1, Lot 173 Quebrache is drilling in gray shale at 2,800 feet.

At Ebano, Mexican Petroleum Co.'s No. 17 Chijol is drilling in shale at 850 feet; No. 19, same, cemented 8-inch in limestone at 1,592 feet. In La Dicha, its No. 29 is drilling in limestone at 1,865 feet; No. 30, same, is drilling at 2,735 feet in a similar formation; No. 31, same, is drilling at 1,020 feet in shale. To the north, in La Culebra, Huasteca Petroleum Co., No. 2, is a deep test now at 3,500 feet in limestone.

In Marland Field, Cia. Pet. Franco Espanola, No. 13 Limon, is drilling in gray shale at 2,010 feet.

Distinguished Visitor

Sir Henry Deterding, chairman of the board of the Royal Dutch-Shell interests, which is represented in Mexico by the Cia Mexican-Holandesa La Corona, S. A., was a visitor here for three days last week. He was accompanied by a personal staff, and Hon. J. B. Body, who is the recognized chief executive official this side of the water of the Mexican Eagle Oil Co., Ltd., which is now affiliated with the Dutch-Shell interests. Sir Henry's visit was one of inspection of the properties under his control in Mexico. Leaving Tampico he proceeded to Mexico City, being accompanied there by A. Jacobsen, among others, the latter being the managing director of Mexican Eagle affairs in Mexico. Coincident with Sir Henry's visit, G. Welter, who for 10 years has ably served the Corona company as chief of its operating departments, was gazetted as general manager vice J. Von Houten, who retires from Mexico.

RUSSIA'S OIL POLICY ATTRACTING CONSIDERABLE INTEREST IN EUROPE

By Leonard J. Coulter

LONDON, Eng., Nov. 30.—The growing realization in Europe that the economic reconstruction of Russia is now in full swing has drawn increasing attention to that country's oil industry. In leading financial and commercial circles in Great Britain, it is freely stated that the resumption of the service on Russia's external debt is no longer a doubtful possibility, but is rather a not far distant probability, and this aspect of the case at once invokes the question, Will the Soviets acknowledge the rights of European and American oil companies which held concessions in Russia before the revolution? This question has, of course, blown up before, but now that the Red Republic is emerging into a state approximating more to financial stability it assumes much more important and momentous dimensions.

That this fact is now recognized is evident from the constitution in Europe of the "International Petroleum Group." This group, the president of which is Sir Henry Deterding, head of the Royal Dutch-Shell combine, comprises a number of important French, Belgian, American and English companies having oil interests in Russia. The objects of the group are to protect and safeguard the rights of petroleum concerns which have concessions in Muscovy, and it has not had to wait long for an opportunity to exert its influence.

Must Recognize Rights

At the recent Grosny meeting, certain French interests declared: "We may expect that very shortly the relations with Russia will be greatly improved, for the Soviets have now become alive to the fact that for the restablishment of their commercial relations with other countries, it is absolutely necessary that the rights of dispossessed proprietors shall in some form or other be respected, and it ought not to be very difficult for the Soviets to come to some agreement for the development of the properties 'nationalized' and still have respect for the rights of the country."

So far, so good, but the question that ought to be settled is, "Why, if the Russians are so anxious to return the properties to their rightful owners, are the French promised a number of important concessions? For such is the case. M. de Monzie, the French Senator, has just returned from Moscow, where he saw M. Trotsky with a view to getting first-hand information as to the present situation. After being feted and sent safely home, M. de Monzie has expressed himself as quite enthusiastic as to the good intentions of Russia, and is pleased to hear from them that "the dearest wish of their hearts is to have a close understanding with France." Then, another Senator, M. Roustan, is of opinion that "the man who waits till there are no Soviets in Russia, or until the name no longer exists, will probably find himself in an inextricable position—he will find himself left outside when all the others have 'gone in.'" Is France to wait, he asks, for the end of the Russian evolution before going to claim her part in the immense markets of Russia? Germany, he contends, has already commenced to establish connections with Muscovy; others are beginning to do so. All scruples are wiped out in view of profits. And, in fact, M. Roustan considers that France should immediately interest herself in the Russian oil industry.

Americans Interested

That the Russians are attempting seriously to interest the French in their oil fields is evident. If not, why all this expense and trouble for the French Government? It is the earnest desire of France that its supplies of oil should be produced and marketed by French companies, and it seems that the Russian authorities are keenly aware of that fact. In any case there is only one conclusion to draw from the statement just made by M. Bogdanoff, president of the Soviet Economic Council. M. Bogdanoff remarked that: "America knows that she is going to run short of petrol, and is therefore obliged to go to some other country for supplies. So she is anxious to come to terms with us, and will sign a commercial treaty with us at once if we will allow sufficient concessions in the Caucasus to give them important advantages for their supplies of petrol."

What the result of this hint may have been on the French policy it would be pure conjecture to say but the new group lets no chances pass. It has stepped in, and at a meeting just held at Deauville, drew the attention of the French Government to the danger of entering into such negotiations. So powerful is the influence of the International Petroleum Group that there is little danger now of the wily Muscovite having matters all his own way, but this latest move on the part of the Soviet Government is a useful indication of the policy it adopts.

NORTH TEXAS MARKET HAS LITTLE CHANGE

FORT WORTH, Tex., Dec. 4.—While there is apparently little change in the New Navy gasoline market in North Texas, quotations being generally around 6¼ to 6½ cents, there seems to be a general inclination on the part of the refiners to store what little stocks of New Navy they have available rather than to offer it at the present time. Notwithstanding the stabilization of the crude market and the fact that jobbers generally are willing to pay slightly advanced prices over those heretofore prevalent, the general feeling among the refiners is that still better prices can soon be obtained, and they are, therefore, in no great hurry to take on orders even at 6¼ cents. One thing certain, there does not seem to be a great deal of New Navy available in North Texas at present current market prices and just what effect this storing policy will have on further advances is somewhat problematical.

Additional export orders for the 64 and 66 gravities have been placed with some of the North Texas refineries which will take care of their output of these grades until late in December.

Kerosene still swings upward in price, general quotations being 5 cents, with some few scattered cars being sold at 4¾ cents. The demand continues fairly good and the supply scarce which makes the prospect for a good kerosene market for the next week or so somewhat bright.

Natural gasoline continues weak with stocks increasing. Refiners generally seem to be willing to make any reasonable concession in price in order to move their surplus stocks. Prices on all grades are approximately ¼ cent lower than quoted last week.

Gas oil has shown a little improvement, price advancing to 2¼ cents with a little better demand and some reduction in stocks.

The fuel oil situation continues to improve, although there has not been any great increase in price. Buyers do not seem willing to pay more than 70 cents, and the refiners have refused to take 65 cents, which has made a firm market at 70 cents. An order for 35,000 barrels was placed today in North Texas at a price understood to be 70 cents. Fuel oil stocks have become almost normal again and the general tone of the market is stronger.

AT A. S. M. E. CONVENTION

Lee C. Moore, chairman; H. P. Porter, section manager, and H. R. Auserswald, delegate from the Mid-Continent section of the American Society of Mechanical Engineers, are attending the convention of that society in New York City.

O'Brien Structural Steel Derricks

Features:

Strength

Ease of erection

Low cost

No upkeep, when put up they stay.

The double splice joint, a patented feature.

Cannot wind or twist.

Has never been pulled in.

Complete Steel Derrick

The sturdy old oak derrick got its strength from the fact that it was an angle derrick. O'Brien derricks are **steel** angles. You know the answer.

O'Brien Steel Construction Co.
Washington, Pa.
Rig Equipment Company, Sand Springs, Okla.

SERVICE IN OIL SECURITIES

We are prepared to furnish information regarding Standard Oil and other oil stocks and to give most efficient service to orders in oil securities.

CARL H. PFORZHEIMER & CO.
(Specialists in Standard Oil and Miscellaneous Oil Securities)
25 Broad Street NEW YORK, N. Y.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

LEASES—PRODUCTION

5,500 ACRES of land located in central Missouri for sale cheap; good investment. See Arthur Eaton, Warsaw, Mo.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

OWN FOUR 160-acre tracts, alternate sections, central Oklahoma. Made investment after careful study. Activity in counties on three sides. Will sell only in forties, retaining half entire. Several tests starting. Offered at $4 per acre, immediate sale. Address John J. Dillon, P. O. Box 194, Denver, Colo.

30,000 ACRES leases, blocked 95 per cent solid in central part of Monroe County, Alabama. Geological report favorable for presence of gas and petroleum. Would be glad to hear from anyone interested in development of a wildcat proposition of this kind. G. L. Nettles, Tunnel Springs, Ala.

TEXAS OIL LEASES 10c an acre up to $10 an acre. Will sell tracts of 10 acres or more. Have 30,000 acres to choose from. All new five-year leases. Get full particulars. Gulf Realty Co., 1093 Bedell Bldg., San Antonio, Tex.

FOR SALE—One-quarter working interest in unit A. Square deal oil and gas operation, of Nebraska. Address Trustee, Stuart McCoy, for particulars. Palisade, Neb.

I HAVE wildcat acreage for sale in vicinity of well located by the same geologist who discovered the Sayre oil field and recommended by him to be as safe an investment as the Sayre Field. I can sell for $2 per acre and up. Dr. W. R. German, Canadian, Tex.

$1.00 PER ACRE for 1,000 or 5,000 acres in the Panhandle of Texas on surveyed structure. Well drilling to prove this territory. No rental due till 1926. A snap for someone. If interested, write and will forward printed geologist's report and map. 300 Alworth Bldg., Duluth, Minn.

FREE ON REQUEST—Map of Allen County, Kentucky, showing pools. Greatest shallow oil field in the world. Production on pipe line and leases with wells equipped and unequipped, near pipe line. Splendid opportunity for oil companies or syndicating. Brokers and promoters protected. Lock Box 4, Scottsville, Ky.

I HAVE 14,000-acre block to give for two test wells. I will furnish maps and report. J. H. Cumley, care The Oil and Gas Journal, Tulsa, Okla.

OWN SIXTY and forty-acre tracts, Archer County, Texas, southeast Archer City. Will sell half $6 per acre, immediate sale. Owner, P. O. Box 194, Denver, Colo.

FOR SALE OR LEASE, several hundred acres near Powell discovery well, Corsicana Field; perfect title; deal with owner. Investments, 613 Mercantile Bank Bldg., Dallas, Tex.

EIGHTY ACRES prairie land on east side of dome, and on fault 6 miles from Damon Mound, Tex., oil field. One hundred dollars per acre, or $65 per acre for surface and seven-eighths of oil. Hiland P. Lockwood, Rice Hotel, Houston, Tex.

I AM STARTING well on a block of 2,180 acres, located on a good anticline in Oklahoma, that has had five producing wells already drilled on it. Am selling undivided interests in the whole acreage with one well completed. A 1/100 undivided interest, $200. Other interests same proportion. To interested parties will send complete geological report, with structural map, cross sections and full details on receipt of $2, which will be refunded to all purchasers. This is a strictly business deal, not a wildcat promotion; and you may put your money in the bank in escrow until well is completed. Address J. C. Stull, Hotel Brady, Tulsa, Okla.

LEASES—PRODUCTION

POTTAWATOMIE COUNTY leases and royalties. B. H. Rowlett, Tecumseh, Okla.

160 ACRES, Panhandle, Texas, near Oklahoma border activity. Sell two forties, $3 per acre, if quick sale. Owner, P. O. Box 194, Denver, Colo.

WEWOKA, OKLAHOMA'S newest oil field, leases and royalties in Seminole and Pottawatomie Counties. Royalty in 33-8-8. W. R. Turner, 2123 Warren Ave., Chicago, Ill.

Answer the 1924 Red Cross Roll Call.

FOR OIL and gas leases on school land in the famous San Juan Basin, New Mexico, priced right, address P. O. Box 366, Farmington, N. M.

Answer the 1924 Red Cross Roll Call.

OIL LEASES of any size from 20 acres and up in the vicinity of two wells that are being drilled near Chandler, Tex. Also leases in Smith County, Texas. Buy now while prices are reasonable on leases in East Texas and don't wait until they strike oil here and then have regrets. R. R. Yoe, P. O. Box No. 291, Tyler, Tex.

6,000 ACRES for drilling contract; extreme south end Lonoke County, Arkansas. R. H. Hardin, England, Ark.

82½ ACRES, Baylor County, Texas, adjoins large acreage held by The Texas Co. Will sell half $3 per acre if taken soon. Owner, P. O. Box 194, Denver, Colo.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—Leases and royalties in Arkansas oil belt, Ouachita, Columbia and Lafayette Counties. Address Box 562, Magnolia, Ark.

PRODUCERS, Refiners and others interested can secure protection acreage on one of the best anticlines in Montana. Recommended by U. S. G. S. and leading private geologists. Test well now drilling. Walter F. Brittan, Poplar, Mont.

WILL TRADE oil leases near drilling well in Childress County, Texas, on structure for similar leases or royalties near other drilling wildcat wells. Our well is fully financed and contracted to reliable people. No rentals till 1926. 300 Alworth Bldg., Duluth, Minn.

NEED TAX MONEY—New five-year leases, McClain County, Oklahoma, direct land owner, 50c bonus. Box 458, Purcell, Okla.

WILL GIVE 12,000 acres for a test well in promising Arkansas territory. Address G. Lucas, 617 Edwards St., Shreveport, La.

FOR SALE—75 acres of land in 15 and 16-12-21, Sequoyah land, about 5 miles south of Empire drilling well. Good land, and a bargain at $10 an acre. J. L. Haner, Muskogee, Okla.

40-ACRE farm, good house, barn, well, orchard, part bottom, about 20 acres cultivation, close to school, church and small town; horse, pigs and chickens. First with $650 gets farm and all. Bee Vanemburg, Moorefield, Ark.

PRODUCTION for sale. Will sell producing oil property, located in Roane County, West Virginia, with one gas well making 2,500,000 two oil wells making 10 bbls. of 49 gravity oil per day, with complete outfit, consisting of four Standard rigs, casing, pipe lines and two Reed engines, with 1,000 bbls. of oil in storage, on lease of 1,400 acres, all on good structure. Here is a bargain; all statements guaranteed. C. Lewis Wilson, P. O. Box 82, Parkersburg, W. Va.

LEASES—PRODUCTION

SEMINOLE and Hughes County, Oklahoma, lands, leases and royalties bought and sold. W. J. Ryan, Holdenville, Okla.

FOR SALE—EQUIPMENT

FOR SALE—Used casing and line pipe in A-1 condition, all sizes. Write or wire for prices. Cisco Pipe & Supply Co., Cisco, Tex.

FOR SALE — A 28 Star, fully equipped, near Sedan, Kans. Will sell cheap to close a copartnership. W. G. Kountz, Webb City, Mo.

HAVE COMPLETE string casing 15½ to 6-inch would furnish on wildcat. E. E. Aldridge, 1002 Burkburnett Bldg., Fort Worth, Tex.

DON'T BUY a light plant until you see Farmelectric, the Ford Parts Plant, and get prices and terms. Chas. S. Brown, state distributor, 21 N. Dewey, Oklahoma City, Okla.

THE WESTERMAN STUFFING Box does not pack with rubber rings and will give long, continuous service without attention. If your supply dealer hasn't them, send your order direct to The Dragon Mfg. Co., Marietta, Ohio.

FOR SALE, delivered, at Mobrland, Utah, 600 feet of 12-inch and 600 feet of 10-inch casing; also 400 feet of 6⅝-inch at Myton, Utah. Address Box 700, care The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION

If you have production to sell send full particulars to

BENJAMIN F. GRAHAM
10 North Clark St.
Chicago, Ill.

FOR SALE—23 Star Drilling Machines in good condition and a complete set of tools; will sell very reasonable for cash. J. H. Brocksmith, 1856 Menard St., St. Louis, Mo.

WE HAVE for sale at $3.50 each, about 100 copies of Hilgard's Report on the Geology of Mississippi (1860). These reports are rare, but are indispensable to geologists who expect to work in Mississippi. Address E. N. Lowe, Director, Geological Survey, Jackson, Miss.

SECOND-HAND PIPE—All kinds of used pipe. At present we have 10 miles of 8-inch oil line pipe. For particulars write Ohio Iron & Supply Co., 909 St. Johns Ave., Lima, Ohio.

FOR SALE, CHEAP — Standard rig, complete, Oil Well Supply Co. outfit. Address John Ewen, Alanreed, Tex.

FOR SALE — Two-unit compression gasoline plant with 1,000,000-ft. capacity, now making 1,000 gallons daily. Also a complete refrigeration system and an 800-bbl. refinery. These are all in good condition and on same site. Will sell everything for $50 per gallon daily production of gasoline. Wire if interested. Century Oil & Refining Co., South Bend, Tex.

FOR SALE—Gurley light mountain transit with Stadia wires and vertical arc. Good condition. P. O. Box 1048, Ponca City, Okla.

FOR SALE—All sizes used casing and line pipe. Wire or write for prices. Breckenridge Salvage & Supply Co., Breckenridge, Tex.

FOR SALE—One string of standard tools, from 18-inch to 5⅛; 50 h. p. boiler; 12x12 Ajax engine, used on 3 wells. Also one No. 28 Star machine, with calf wheel; 25 h. p. Mounted Oil Field Boiler; tools from 10-inch to 6⅝, with machine. For further information write H. L. DeWoody, 817 Hargrove St., Ardmore, Okla. Telephone 1648. Will sell at a bargain.

FOR SALE—EQUIPMENT

TANK BOLTS
SAME-DAY SHIPMENT
5/16x¾-inch, ⅜x¾-inch, ⅜x1-inch, ⅜x1¼-inch, ½x1-inch.
Write or wire for quotation.
SHEETS—All gauges and sizes; galvanized, blue-enamel. Also corrugated and composition roofing. Plates to ¼-inch.
STEEL MFG. & WAREHOUSE CO.
1447 Genesee St. Kansas City, Mo.

Answer the 1924 Red Cross Roll Call.

USED MACHINERY of all kinds; boilers, steam and gas engines, compressors, boiler tubes, pipe and fittings. Ask for stock sheet. Landreth Machinery Co., Joplin, Mo.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—De Laval separator, good condition, less than half price. Bryte-Nelson Refining Co., 1171 Arcade, St. Louis, Mo.

BRAND NEW pipe tools, original cases, for 9-inch, 10-inch and 12-inch pipe; 3 Toledo Pipe Threaders No. 4, each, $185; also 4 Barnes No. 7 Pipe Cutters, each, $15. Prices are f. o. b. cars, New York. Allen Ashley, 152 W. 42d Street, New York.

FOR SALE—PETS

NEWFOUNDLAND — At stud, Togo, A., K. C. 373051; also thoroughbred Newfoundland puppies. Box 62, Fort Riley, Kans.

WANTED

WANTED—Someone to help finance a well on proven acreage on structure, high grade oil. Will not consider any promoting. Box 751, Fort Worth, Tex.

WANTED—Acreage on good geology for drilling contract. Address Box 901, care The Oil and Gas Journal, Tulsa, Okla.

PERSONAL NOTICE—Anyone knowing the whereabouts of Harry Parker, oil driller of Laredo, Tex., please notify sick mother, Mrs. Mary Parker, 448 St. James Place, Chicago, Ill.

STOREHOUSE OF INFORMATION

The Oil and Gas Journal contains statistics and unlimited information that is most valuable to the oil and gas man. Calls for back numbers are so numerous we are unable at all times to supply the demand—in fact, we can furnish very few back numbers. The issues missing from our files may be the ones you want. To make it possible for you, at all times, to refer to special articles or other information you desire, we have secured binders specially designed and durable and attractive in appearance that hold 26 numbers, or six months' issues. They are for sale at actual cost to us.

Price $2.25, Postpaid

THE
PETROLEUM PUBLISHING
COMPANY
114-116 West Second Street
Tulsa, Okla.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

WANTED

F. W. MERRICK, Ardmore, Okla., desires the address of one Mr. Campbell, who worked for the Paraffine Oil Co. at Wirt, Okla., in the year 1914. Matter of interest to Mr. Campbell. I think Mr. Campbell went to Walters, Okla., after leaving the Healdton Field.

WANTED — Several experienced oil well drillers and helpers. Best of wages to the right men. Michigan Oil Development Co., Aarons Bldg., Manistee, Mich.

PRODUCING Royalties Wanted. Send full particulars and lowest cash price. H. M. Haverbeck, 50 Broad St., New York.

WE ARE in the market for first-class second-hand pipe threading machine that will take up to 15½-inch pipe. State make, condition, price and where can be inspected. Simmons, Box 42, Eastland, Tex.

ROYALTY PRODUCTION wanted. Will pay cash for Mid-Continent production. Write us what you have, giving production, price and location. Address P. O. Box 1288, Tulsa, Okla.

WANTED — Brokers or Promoters: Awarded 6,000 acres by Commissioner New Mexico; largest structure in America; Government shows seepage; drilling well excellent showing; competition keen. Syndicate comprises 4,800 acres at $15 acre. This purchases 16 units of 24-unit company. Well site 1,000; excellent geology; structure 2,000 feet higher than Amarillo; good commission. K. O. D. L. Co., Box 824, Wichita, Kans.

BUSINESS OPPORTUNITY

SALES MANAGER will put $10,000 and services into business or venture that promises a worth-while future. P. O. Box 457, Chicago.

To circularize the readers of The Oil and Gas Journal, once, it would cost more than $500. For a small sum you can reach these readers and place your proposition before them.

The classified rates are attractive. It costs but 25 cents the line for the first insertion and 15 cents the line for each additional insertion. Six words usually make a line. Cash with the order.

This useful table will help you to figure the cost of Classified Advertising in The Oil and Gas Journal. Keep it for reference:

	1 time	2 times	3 times	1 month
3 lines	$ .75	$1.20	$1.65	$2.10
4 lines	1.00	1.60	2.20	2.80
5 lines	1.25	2.00	2.75	3.50
6 lines	1.50	2.40	3.30	4.20
7 lines	1.75	2.80	3.85	4.90
8 lines	2.00	3.20	4.40	5.60
9 lines	2.25	3.60	4.95	6.30
10 lines	2.50	4.00	5.50	7.00

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—2,000 shares of the Blue Bird Oil Corp. of Houston, Tex., at 3c per share, par value 10c; also $500 production bond that goes with it, for quick delivery. Address J. H. F. Laflamme, 401 South A St., Arkansas City, Kans.

WILL FURNISH a 320-acre block in Pushmataha County for drilling contract. Wm. J. Riley, Atlantic City, N. J.

WANTED—An issue of securities to float in the East by reliable concern on commission. Address Brokers, U. S. Realty Bldg., Suite 512, New York.

BUSINESS OPPORTUNITY — Can get proven acreage payable out of half of first oil produced. Let us secure this acreage and drill well for you. This acreage available short time only. Act quick. Johnston Drilling Co., El Dorado, Ark.

BUSINESS OPPORTUNITY

WILL MAKE up selected drilling blocks, Hempstead, Howard, Sevier Counties, Arkansas, for small cost. F. E. Waldrop, Nashville, Ark.

EASTERN CAPITAL is interested in refining proposition. Give full particulars in first letter. Address Box 808, care The Oil and Gas Journal, Tulsa, Okla.

BROKERS, NOTICE!

Brokers and others who desire to make reliable connection in the Oklahoma oil fields, write me. Best bank references; 10 years' experience; have helped many others make money; can furnish oil production, leases and royalties in good fields. If you desire to buy or handle oil properties, write me. John S. Graham, Oil Producer, Chickasha, Okla.

COMMON LAW COMPANIES — Organize under Declaration of Trust; many advantages; legal everywhere; managed by trustees; limited liability. No State organization fees, reports or franchise tax. Meet or do business anywhere. Better than a corporation or partnership. Booklet free. Modern Organization Co., 304 South Broadway, Los Angeles, Calif.

CAPITAL RAISING — Compaigns planned, written, printed — everything complete ready to mail to investors. Twenty years' experience handling investment advertising. Clients all over America. Big, illustrated book, "How to Raise Capital" free if you submit detailed outline of your proposition. Ernest F. Gardner, L-511 Ridge Arcade, Kansas City, Mo.

Christmas is coming. You will want to give a present to your friend; a gift that will help him in his desire for advancement; a gift worthy of his intelligence.

The Oil and Gas Journal will make an excellent gift. It will help your friend and throughout the year it will be a reminder of your friendship.

Send your friend's name and complete address with your remittance to us and The Oil and Gas Journal will be mailed to him every week.

We will advise him of your kindness.

AN OPPORTUNITY

A group of oil men and capitalists are building an oil refinery on deep waterway at Montreal, Can., the company having many subsidiary interests and connections in kindred lines providing for the establishment of large and extended operations and for successful and profitable business. The location provides for deep water tanker supplies of crude oil from all available fields, and for most direct access to both domestic and foreign markets for the manufactured products of the refinery. The group interested is seeking an experienced official and operating staff to join with them in the enterprise. It is desired that such positions be manned by men who will take some financial interest in the company and give assurances of the requisite experience, ability and responsibility. Communications treated confidentially. Address Box 271, Station H, Montreal, Can.

POSITION WANTED

OKLAHOMA C. P. A. desires connection with oil corporation as manager, comptroller or auditor by first of year. Several years' experience in oil business. Capable of assuming large responsibility. Address Bennett, 521 Wichita, Shreveport, La.

HIGH-CLASS man, experienced officer and department head, qualified in all lines of production office work; expert accountant and organizer; pleasing personality, with ability to meet the demands of the position, familiar with all Mid-Continent fields, wishes to make new connection by January 1. Address Box 902, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

FARM FOREMAN desires a change. Have been in Mid-Continent Field for 20 years. Can go anywhere. Can handle shallow or deep production. Address, Box 127, De Noya, Okla.

WANTED — Position by experienced welder and mechanic. Have had four years' experience in pipe and refinery work. Best of reference and will go anywhere. Address Box 2, care The Oil and Gas Journal, Tulsa, Okla.

MECHANICAL ENGINEER, with broad experience in large refinery engineering, designing, building, testing and operating gasoline plants, will be open for position with responsible company about January 1. Box 800, care The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of tools and production and expert fisherman, desires connection with reliable oil company; years of practical experience. Can go anywhere. Box 110, The Oil and Gas Journal, Tulsa, Okla.

LUBRICATING ENGINEER and manager retail sales, open for consideration; 10 years' experience. Address Box 900, care The Oil and Gas Journal, Tulsa Okla.

Answer the 1924 Red Cross Roll Call.

POSITION WANTED—Should you be desirous of engaging a man to supervise the operation or construction of your plant, and one who can manage an organization in a high-powered manner and get results, then I am one who can serve your purpose. Have 14 years' experience. Now supervising a plant. For personal reasons am ready for new connections. Will only consider an offer of real merits. Can furnish best of reference. If convenient, can arrange interview. Reply Box 1, care The Oil and Gas Journal, Tulsa, Okla.

FIELD MANAGER, who has had several years' experience in charge of production and drilling for large companies in the Mid-Continent and Wyoming fields, is open for a position of responsibility. Am a graduate engineer and possess references of the highest character. My experience, which has been very thorough and extensive as an executive and field manager, qualifies me to handle the operations of a private individual or the work of district superintendent. If you are in need of a man who has developed character and initiative, please address Box 803, care The Oil and Gas Journal, Tulsa, Okla.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

POSITION WANTED—Graduate geologist, single, 27 years of age, three years' experience in Mexico, mostly reconnoissance, for past year chief geologist for small company, desires position in Latin America or Asia. Best of references. Write Box 807, care The Oil and Gas Journal, Tulsa, Okla.

REFINERY MANAGER - Superintendent desires connection with responsible concern; 14 years' experience in construction and refining; at present in charge of operations and sales of company in south. High-class references. Write Box 806, care The Oil and Gas Journal, Tulsa, Okla.

The Journal has a wide circulation, going to all the oil fields, refineries, pipe line stations, gasoline plants, supply houses and business offices. It thoroughly covers the industry.

REFINERY Superintendent wishes position; 20 years' experience; have built two refineries. Address R. C., care The Oil and Gas Journal, Tulsa, Okla.

LETTERHEADS-PRINTING

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township plats, gauge books, run tickets, time books, well records, etc. Request on your letterhead gets free catalogue. Olds Press, 215 East Third St., Tulsa, Okla.

LATE NEWS FROM THE FIELDS

The district northwest of Hominy claimed the center of the stage Tuesday morning when the Red Bank Oil Co.'s No. 2, CNL NW, Section 29-23-8, found the second break in the sand at 2,828 feet and started flowing at the rate of about 100 bbls. an hour. The oil tests 36 gravity and is being taken by the Ozark Pipe Line Co. This well, after getting several gas showings at various depths and making 15,000,000 feet from the 2,244-foot level, was almost abandoned because of trouble in the hole. It is about three-eights of a mile southwest of the big Marland producer, which has been making about 3,850 bbls. daily, pinched in, and which is estimated to be good for 5,000 bbls.

The Comar Oil Co. and the Gypsy Oil Co. have succeeded in shutting off the water in their Kay County wildcat No. 1 Garrett, CNL NE NW SE, Section 31-27-2e. It made 80 bbls. on the swab during part of one day and is estimated to be good for a 50-bbl. pumper.

The Link Oil Co.'s No. 1 Saryokishe, SE cor. SW SW, Section 4-13-8, Okfuskee County, flowed 850 bbls. in 24 hours from sand at 3,469-84 feet. First oil was struck at 3,475 feet.

The wildcat in Russell County, Kans., being drilled by the M. M. Valerious Oil Co. and others in the SE cor. SW, Section 8-12-15w, which swabbed 75 bbls. had 700 feet of water in the hole, probably from the 5-inch casing, which was being pulled in order to remove the perforated joint and lower it to the bottom of the hole. Total depth was 2,967 feet in black shale and lime.

STANDARDIZED DERRICKS

Patrick Yorke, acting for the American Petroleum Institute, has requested manufacturers of metallic turnbuckle and wood derricks to meet at the Statler Hotel, St. Louis, next Tuesday, for the purpose of making an effort to standardize derricks.

TULSAN DIES IN BURMAH

Word was received by the Oil Well Supply Co. of the death from black water fever of Marcus A. Byron, 36, a former Tulsa driller, in the field hospital of the Indo-Burmah Petroleum Co. in Yenangyaung oil field, in Burma. He is survived by four sisters, Mrs. J. F. Mc Gouldrick, Tulsa; Mrs. R. P. Reak, Flint, Mich.; Mrs. John A. Lynch, Bowling Green, Ohio; Mrs. John Day, West Chester, Pa.; five brothers, P. H. Byron, India; Edward Byron, Denver, Colo.; James A. Byron, Los Angeles, Calif.; John B. Byron, Tulsa, and William B. Byron, Bartlesville.

DEATH OF ELMER CHAMBERLAIN

CHATHAM, Ont., Dec. 1.—Elmer F. Chamberlain, aged 23, son of Fenton Chamberlain of Sarnia, Ont., was drowned in Wascana Lake, near Regina, Sask., while skating. Mr. Chamberlain was head chemist at the Imperial Oil, Ltd. refinery at Regina, having been transferred from the Sarnia office a few months ago. His father has been with Imperial Oil at Sarnia many years.

CALIFORNIA FIELDS

(Continued from Page 50)

terson, the former being the larger. Number 1 Mattern was drilled to 4,650 feet and completed with a 4¼-inch oil string landed at 4,645 feet, while No. 8 Patterson was drilled to 4,556 feet and finished with a 4¾-inch oil string landed at 4,554 feet. The former, No. 1 Mattern, is flowing 2,250 bbls. a day of 32.7 gravity oil with a cut of 2 per cent, through a 1¼-inch bean under a pressure of 225 pounds, while No. 8 Patterson is flowing 825 bbls. a day of clean 32.1 gravity oil through a ⅞-inch bean under a pressure of 350 pounds. The completion of these two wells gives the company a daily production in this field of a little better than 20,000 bbls. Number 7 Patterson was due to be an early completion at 4,575 feet, but because of a fire which burned the rig, its completion will be temporarily held up until a new rig is erected.

The Union Oil Co. brought in only one well during the week, No. 20 Bell, but, inasmuch as it was a good one, the company is very well pleased. Number 20 Bell, finished at 4,700 feet, is producing 1,250 bbls. a day of clean 33.9 gravity oil. It was completed with a 6¼-inch oil string set at 4,200 feet and is flowing through two 1⅛-inch beans under a pressure of 600 pounds. The Union has cleaned out and deepened No. 4 Bell from 4,663 feet to 4,685 feet and either this well or No. 7 Alexander, now being prepared for production after being finished at 4,700 feet, should be the company's next producer.

Oscar Howard brought in a nice well on his Hathaway lease during the week and in addition to this completion, No. 5, standing cemented at 4,585 feet, should be brought in some time during the next three weeks. Howard's new well, No. 4 Hathaway, was completed at 4,600 feet and registered an initial production of 1,200 bbls. a day of clean 34.2 gravity oil. Number 4 Hathaway was completed a short time after No. 2 Hathaway died. The latter well is being rigged up to pump and will probably be put on the beam some time next week.

Although the Standard Oil Co. did not actually put any new wells on production during the week, the company has several rapidly nearing completion depths and the completion of at least three during the next week is expected. The company's well No. 1 on the W. L. Houghton lease has passed the 4,800-foot mark and, while production was expected a little deeper than the usual depth, the well has even failed to show colors, not to mention an oil sand. The formation at the present depth is a sandy brown shale and unless the well develops production within a short time it will probably result in a duster, as it has already passed the depth favored for production.

Huntington Beach

The output at Huntington Beach has reached the point where only a slight change is to be expected each week and, unless several substantial wells are brought in, the production will continue to decline at a slow rate. There have been very few wells brought in during the past several weeks at Huntington Beach with an initial daily production of over 500 bbls. and the present week was no exception. The largest well put on production during the past several days was No. 1 Davenport of the Shell Oil Co. This well was redrilled and deepened from 2,708 feet, its former production depth, to 3,800 feet and was returned to production doing 495 bbls. a day of 22.1 gravity oil with a cut of 6 per cent. Well No. 6, on the same lease, originally drilled to 5,087 feet, has been plugged back to 4,725 feet and an effort will be made to put it on production at this depth. The same company's No. 8 Ashton was finished at 4,850 feet and the company is swabbing in an effort to stimulate production. The Davenport & Ashton properties are both in the northern part of the field and subject to edge-water conditions.

The Petroleum Midway Co. brought in the best well which it has completed in this field for several weeks and as a result the company increased its production 490 bbls. a day. Number 1 Barker, the company's latest addition, is an offset to the Pacific Petroleum Corp.'s well No. 2. It was completed at 4,321 feet and registered an initial flow of a little better than 490 bbls. a day, the oil testing 22.1 degrees and showing a cut of 2 per cent. Number 2-A Curtis of the Selby-Root Oil Co. was another weekly completion. It was finished with a 4½-inch oil string landed on bottom, 4,990 feet, and registered an initial production of 265 bbls. of 24.2 gravity oil with a cut of 2½ per cent.

Newman & Meredith were successful during the week in returning the old Talbert Oil Co.'s No. 1 Bragg to production after cleaning it out. This well was originally completed during the latter part of 1921 and put on production at 2,718 feet. The well was pumped for a short time and then remained idle for several months. A fishing job of several months duration, resulting from an attempt to deepen it, was successfully completed a short time ago and the well, upon being returned to production, is pumping approximately 135 bbls. a day.

The smallest new well put on production during the week was the Lynwood Oil Syndicate's No. 1, formerly the Dodge Syndicate's well No. 1. This new producer, finished at 4,427 feet, is pumping 125 bbls. a day of 22.4 gravity oil with a cut of 4 per cent. The Julian Petroleum Corp. finished its well No. 3 at 4,467 feet and when put on production some time during the coming week the company will probably be rewarded with a 200-bbl. well. The Union Oil Co. has been working on No. 7 Copeland for the past several months in an effort to overcome a water problem, but a test made during the week reveals the fact that the company was not entirely successful. The well on a production test pumped 35 bbls. of 24.3 gravity oil with a cut of 10 per cent during the first 24 hours. It is possible, however, that the well will clean up after pumping several days.

Torrance

An estimate was made several weeks ago that the Torrance Field production would reach 50,000 bbls. daily around the first of the year. In view of the fact that there are some 15 or 20 wells nearing completion, it is possible this estimate may even be exceeded. The largest producer to be put on production during the week was the Pan-American Petroleum Co.'s No. 1 Lomita, which is flowing 2,100 bbls. of 23.4 gravity oil. The output from this well, which was drilled to 3,775 feet and finished with a 6¼-inch oil string, shows a cut of 2 per cent. The Superior Oil Co. also finished a nice well, its No. 8, put on production at 3,807 feet, started off flowing at the rate of 1,700 bbls. a day. The output from this well, which was finished with a 4¾-inch oil string, tests 26.3 degrees and shows a cut of 1½ per cent. The Universal Oil Co. completed its first well in this field during the current week by bringing in No. 1 as a 1,200-bbl. producer after drilling at 3,740 feet. The oil from this well tests 23.8 degrees and shows a cut of 2 per cent. In addition to this recent completion, the Universal is drilling six more wells, ranging in depths from 764 feet to 3,200 feet.

The Sentinel Oil Co., in addition to bringing in a good well, secured a favorable core in No. 1 Joughin at 3,640 feet. The company's completion was No. 1 Martin, which was drilled to 3,750 feet and finished with a 4¾-inch oil string landed on bottom. The well came in flowing 1,500 bbls. a day of clean 25.2 gravity oil. The C. C. M. Oil Co., in addition to bringing in a new well, No. 10 Torrance, is preparing several others for production tests. Number 10 Torrance, which was finished at 3,720 feet, resulted in a 250-bbl. producer. This well was originally drilled to 3,831 feet, at which depth bottom water was encountered. It was later plugged to its present production depth, 3,720 feet, and although the oil still shows a cut of about 5 per cent, it is as good as could be desired under the circumstances. Number 11 Torrance, which sanded up after its completion last week, is being cleaned out, while No. 13, finished at 3,725 feet, and No. 15, completed at 3,715 feet, are being prepared for production tests. Numbers 19 and 20, on this same lease, should also be early completions. The Consolidated Mutual Oil Co. found a slight showing in its well No. 1 at 3,650 feet, while the Julian Petroleum Co. picked up what is probably the same sand at 3,659 feet. Both wells will be cemented and tests made some time during the next two weeks.

New Drilling Record

It is reported that the Checot Oil Trust has purchased the property and holdings of the Fortuna Huntington Signal Oil Co. for a consideration said to be $150,000. The property acquired consists of three acres and three small leases, a 1,000-bbl. well being located on the former.

The California Drilling Co. established a new field record for drilling during the week by making 662 feet of hole and setting 560 feet of 15½-inch casing in the Black Diamond Oil Co.'s well No. 1 in 16 hours working time. There were many new rigs erected in the field during the week, which will be reflected in the output of the district some three or four months hence. The Petroleum Midway Co. started four new rigs, while the Chanslor Midway Oil Co., which has been the pace setter for some time, began the construction of No. 4 Kettler and spotted another location. The Superior Oil Co completed the derrick for its No. 14 Torrance and is now rigging up No. 13 on the same lease. The Petroleum Midway Co.'s four new derricks are No. 1 Dietrick, No. 2 Stock, No. 2 Thornberg and No. 1 Nuckles. The Bush Drilling Co. completed the rig for Bush and Wrights' well No. 1, while the Lee Oil Co. is just finishing its first rig north of the Beaver State Oil Co.'s No. 1. The James F. Nugent Co. has also just finished erecting a new rig. Its well No. 1 is about a half block north of the Federal Drilling Co.'s No. 1 Gerner, a recent completion.

Miscellaneous Drilling

The only producing well at Compton, the Union's No. 1 Callender, continues to flow at a steady rate, production during the past week averaging about 1,375 bbls. There is only a limited amount of development work being done at present and, until the completion of another well or two and partially proving up of the field, no great amount of additional work is expected to be undertaken. C. C. Julian has just about finished cleaning out his No. 1 Murphy, which has been held up for three months by a fishing job, and will begin making hole within the next day or two. Davis & McMillan and the General Petroleum Co. are each racing down to the oil sands, the Davis & McMillan well No. 8 showing 4,325 feet of hole while the General Petroleum's No. 1 Gardena is drilling ahead at 4,125 feet.

Field Operations

Oil field operations reported to the State Oil and Gas Supervisor show 28 new wells started, compared with 32 during the previous week, a total for the current year to date of 1,295, compared with 1,308 at the same time last year. Permits were issued for the following new wells:

Torrance

Location. Company and Well—
23-4-14 Beaver State Oil Co. 2.
Pet. Midway Co., Ltd.—
14-4-14 Mitchell 1.
14-4-14 Wilson Com. 4.
14-4-14 Wilson Com. 5.
23-4-14 Thornburg 1.
14-4-14 Post Houts 2.
14-4-14 Walker Nuckles 1.
15-4-14 Pet. Securities Co. 8.

Long Beach

30-4-12 Walter H. Fisher 7.
19-4-12 Meserve-Knight-Son 1.
E. A. Parkford—
19-4-12 Richardson 1.
19-4-12 Richardson 2.
San Martinez Oil Co.—
29-4-12 Fry 2.

Santa Fe Springs

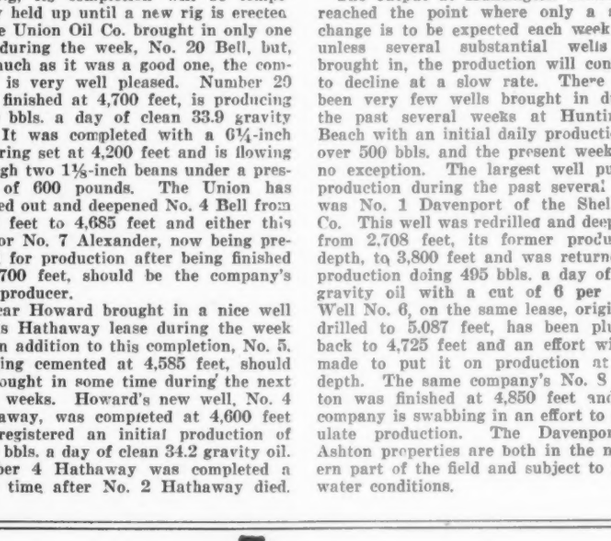
Standard Oil Co.—
5-3-11 So. Whittier Com. 16.

Huntington Beach

Standard Oil Co.—
27-5-11 Orange Co. Title Co. 1-A.

Compton

General Pet. Corp.—
29-3-13 Samuel J. White 1.



PLAY SAFE!

You can always KNOW YOU ARE SAFE, both from an investment standpoint and the service received by using "F & T" Boilers.

Large stocks carried at all principal distributing points of all fields west of the Mississippi River and Buffalo, New York.

Orders received by mail, telegraph or telephone promptly and efficiently attended to.

D. F. CONNOLLY AGENCY, Inc.
623-24 Kennedy Bldg., TULSA, OKLA.
Phone Osage 1929 Night Phone Cedar 2798

MACWHYTE WIRE LINES BELTING H. & A. BULL ROPES

BOILER REPRESENTATIVES
Los Angeles, Calif.—Hillman-Cooney, Inc., 408-9 Higgins Bldg.
Casper, Wyoming—Northwestern Supply Company.
Beaumont, Texas—Brooks Supply Company.
El Dorado and Smackover, Ark.—S. Bender Iron & Supply Company.
Shreveport, Louisiana—Oil City Iron Works, 204 Strand St.
El Dorado, Kansas—El Dorado Machine & Tool Company.
Fort Worth, Texas—Longhart Supply Company.

PALEONTOLOGISTS NOW EMPLOYED TO DELIMIT GULF SALINE DOMES

By P. L. McGreal

HOUSTON, Tex., Dec. 3.—Science, as represented by geology and paleontology, and improved mechanics, is to play a greater part in the future in the locating and development of saline domes in the Gulf Coast region. The domes of the future will not require from 10 to 20 years' exploration work before they become producing pools and, incidentally, the cost of finding and developing such saline formations will be greatly lessened.

All the present pools around salt domes in the Coastal Plains belt of South Texas and Louisiana took years of exploration work to develop and in a number of cases domes are still undefined, although some production has been developed on one or more sides of them. Blue Ridge in Fort Bend County and Barber Hill in Chambers County are two instances that can be cited. There are others, but the two mentioned are recent and both have been the scene of much work with indifferent results.

Heretofore it has been the custom to start drilling just as if operations were being conducted in proven territory. The first tests were made on the dome and these usually found the rock salt at depths ranging from 800 to 1,500 feet. The rigs were then moved to the edges or slopes of the domes and holes drilled which usually went into shales, or shales and sands some times carrying gas or saturated with oil. The next move was to locate the true sands outside of the shale zone. This seems simple enough as it is written, but the difficulty has been to determine the extent of the salt area, then the width of the shale areas, and finally the depths and extent of the oil sands. To prove up these areas has been very expensive and required time.

Large Salt Areas

For illustration, the extent of the salt area would be so large as to discourage operators, who would quit and forfeit their leases. Exploration work at Stratton Ridge in Brazoria County demonstrated that the salt area is more than 4 miles across from the northeast to the southwest and the North Dayton dome is 5 miles in extent and still but partially defined. Necessarily, exploration work lagged and years elapsed between tests. In this way hundreds of thousands of dollars were expended in drilling tests before oil was found in commercial quantities. The Hockley Dome in Harris County, the High Island Dome in Galveston County, and Big Hill in Jefferson County are examples, where exploration work is still in progress by persistent operators, who have faith in the future and hope some day to locate rich oil bearing sands. Other places might be mentioned, but these will suffice to show the time and expense necessary to develop pools in the Coastal Belt. There is a bright side to the picture, however, that spurs operators on in this wildcat work and that is the fact that once a dome is properly developed, the pool will produce more oil to the acre than any other territory in the country.

Profiting from the costly experiences of the past, the modern wildcatter searching for salt domes has equipped himself with a light rotary rig, capable of drilling from 1,000 to 1,500 feet, seeks geological advice and has samples of the formations examined by a paleontologist, who determines whether the shells and fossils denote an uplift. Without intruding on the technical side, the theory is that if the fossils are out of place geologically, it denotes an uplift and if they are where they should be found the wildcatter is "out of luck" and might as well move off the location. Practically all the major companies in the Coastal country have added the services of a paleontologist to their geological departments and wildcatters are free to submit specimens for examination as well as making laboratory tests. In this way the major companies encourage the wildcatter to assist in developing the dome region.

C. N. Scott, a former vice president of The Texas Co. and manager of the production department, was the leader in adopting the modern method for determining the presence of salt under a dome. For not all elevations are salt domes. These elevations rise from a few feet to as high as 85 feet above the surrounding prairies, Damon Mound and Barber Hill being the highest.

Mr. Scott is now operating independently in Cameron Parish, South Louisiana, in the section known as Johnson's Bayou. He is using a specially built rotary outfit designed by himself and operated with a gasoline auto truck engine. The rotary table, draw works, engine and pump are separate and mounted on skids, thus facilitating shifting from locations. Two men operate the outfit, which will drill to 1,000 feet and possibly lower. Mr. Scott and associates have 2,000 acres in fee and under lease and will drill six or more tests to determine if the formations are dome or not. A number of light rigs, operated with gasoline engines, are in use in the Coastal region, but they require more men that does the specially designed outfit mentioned. The Scott design will permit three joints of drill pipe to be pulled and stacked at a time, using heavy timbers in the form of a tripod, 72 feet high, or nearly as high as the old time derrick. Casing can be set with the Scott machine if necessary to shut off water.

Economy is the principal factor that enters into the use of the light rigs. It is estimated tests can be drilled for 50 cents per foot, or even less as compared with from $3 to $3.50 per foot when the regular rotary outfit is used. Savings are effected in labor, fuel and pipe, and besides the new outfits can be moved much more cheaply and no time is lost in "setting up" on new locations. Two or three holes can be drilled for the cost of one by the old method and in the same space of time. When the wildcatter proves an elevation is a salt dome he can nearly name his own price for the acreage surrounding it, because the expensive, unremunerative work has been done and all the purchaser has to do is to find the oil sands.

Companies have been organized to finance the cost of the exploration work. The modern exploration company will require large tracts, since it would not be feasible to drill and locate the salt mass while other operators held the surrounding acreage which might be the productive territory.

Coupled with the operations of the new exploration companies is the possibility that present leasing customs may be changed. Now the wildcatter pays the land owner a bonus, ranging from $1 to $100 per acre and higher. The latter figures apply to districts where some exploration work has been done around a known salt mass. In most cases the land is merely prairie pasture, but the owners have garnered considerable revenue in the shape of bonuses and indeed instances are not uncommon where owners have collected two and three times the actual value of the land in the form of bonuses and rentals on the mineral rights. The wildcatter shouldered all the burdens.

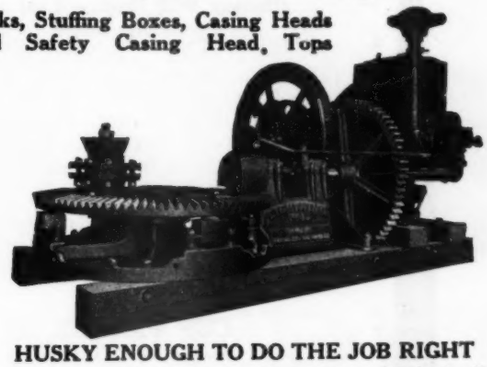
In the future the land owner may be required to share the speculation with the oil operator. The lease can be placed in escrow subject to certain conditions. If dome formations are found the lease will become valid and operative upon the payment of an agreed bonus. In other words if the territory does not show favorably as an oil prospect the owner receives nothing and if it does he gets the bonus price stipulated in the contract.

More Power—Less Vibration

Instant Service

Insist on Lightning Pumping Powers They Are Correct in Design

Jacks, Stuffing Boxes, Casing Heads and Safety Casing Head, Tops



HUSKY ENOUGH TO DO THE JOB RIGHT

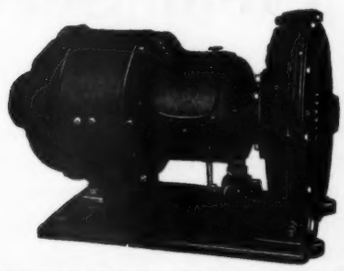
The reliable eccentric motion does away with jerky lines. Built in 3 sizes.

No. 1—6 to 8 H. P. engine, weight 3,200 Lb.
No. 2—12 H. P. engine, weight 4,600 Lb.
No. 4—Belt drive, weight 6,500 Lb.

Turntable gear is easily removable and having a broad face, coarse teeth and large diameter will stand up to the heaviest loads.

SHACKLE LINES SET LOW TO THE GROUND (13 IN.) ELIMINATE EXCESSIVE STRAIN. QUICKLY INSTALLED.

Oil Field Supply Dept.
KANSAS CITY HAY PRESS COMPANY
Kansas City, Mo.



MOON TURBINE GENERATOR SETS ARE

SAFE—

EFFICIENT—

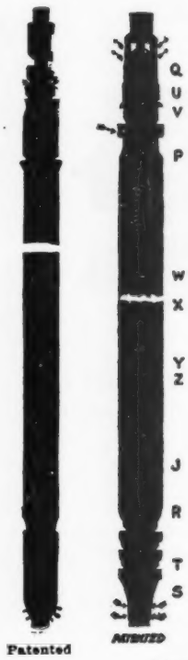
ECONOMICAL

Have You Investigated the New 1½ K. W. Outfit?

The Moon Manufacturing Co.
122 North Jefferson St.
Chicago, Ills.

MOON LIGHTING OUTFITS

Stop Pulling Tubing



The McGREGOR Working Barrel or Plunger Will Reduce Cost of Operating Lease

It is not an experiment—years of actual service have proven it is the best Working Barrel on the market. It is used by a majority of producers, both large and small, throughout the United States and foreign fields.

Especially adapted for wells making sand or with worn-out working barrels or leaky valves. On new wells use McGregor Seat, Part M.

CUP PACKER

Patented April 15, 1919

Exclusive Improvement on Barrel

This new Cup Packer on top prevents barrel from sticking and sand from settling in between tubing and outside of barrel.

Can be applied to any McGregor Working Barrel in oil fields. Can be ordered separately; 30,000 in use. If you wish cup packer, specify same on order.

See your dealer or write us for circular

McGREGOR WORKING BARREL CO., Inc.

Sole Manufacturers

BRADFORD, PA.

Oil Field Service

THIS service consists of drilling and equipping wells and leases. Righting bad holes and fishing for operators and drilling contractors. Developing and managing oil and gas properties. Determining proper casing points and weights of casing to use. Removing water from flooded wells. Renovating old wells.

Practical and confidential scouting. Geological and engineering reports. Surveying and mapping. Surface and sub-surface contouring. Appraising oil and kindred properties. Estimating the present worth and future prospects of stock, bond and note issues of oil and kindred companies.

Supplying commercial leases, also acreage for drilling, located on carefully selected structures in the proven, semi-proven and wildcat fields of Kentucky, Oklahoma and Texas.

T. S. McGRATH

Kenyon Bldg., Louisville, Kentucky

FIELD OPERATIONS DURING NOVEMBER

(Continued from Page 38)

showed 1,500 feet of oil with seven feet of sand and salt water present. Standard rig is on the ground to complete the well.

Gas production exactly equalled that of the preceding month.

WYOMING

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Big Muddy	0	0	0	0	9	9
Salt Creek	32	11,229	0	52	109	161
Lance Creek ...	2	3,000	0	0	8	8
Warm Spgs., etc.	0	0	0	3	22	25
Big Horn Basin.	2	0	1	4	23	27
Lost Soldier ...	1	0	0	12	47	59
Rock River dist.	1	400	0	1	20	21
Fremont County.	2	0	2	4	30	34
Mule Creek	0	0	0	0	2	2
Osage	1	25	0	3	24	27
Natrona County	1	0	1	1	21	22
Lincoln and Uintah Cos...	0	0	0	4	17	21
Baxter Basin...	0	0	0	2	13	15
Miscellaneous ..	1	15	0	8	44	52
Total Nov.....	43	14,669	4	94	389	483
Total Oct.....	39	10,745	5	109	417	526
Difference ...	4	3,924	1	15	28	43

Gas production, 71,000,000 feet.

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Cat Creek	3	300	0	2	22	24
Kevin Sunburst.	18	795	5	13	38	51
Miscellaneous ..	1	0	1	5	108	113
Total Nov....	22	1,095	6	20	168	188
Total Oct.....	33	780	14	23	191	214
Difference	11	315	8	3	23	26

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Miscellaneous ..	0	0	0	0	24	24

(Same as October.)

New work inaugurated during November in the northwestern fields failed to come up to the wells completed or abandoned in the same period. Both in the number of completed wells and production, the Wyoming fields made a better record than in October; but there were few new rigs erected or wells begun during the month. The Salt Creek Field shows a falling off in activity which may be traced directly to the drop in the price of crude oil. The outlying fields and wildcat districts are feeling the effects of the season. Here again the price of crude plays a big part, as there is no incentive to expensive wildcatting when the proven fields find it hard to market production without a loss.

In addition to the completed wells, a number have been dropped from the lists both in Wyoming and Montana without appearing in the completions, for the reason that the wells were not officially reported completed. On account of lack of funds or other discouragements, the wells are shut down, and after a long lapse of time, finally abandoned without ever touching the sands. Such wells canot be fairly recorded as dry holes in the completed column. In the wildcat districts of both States, this happens again and again, confusing the records and confounding the statistician.

Montana reports fewer completed wells than last month, but a larger amount of new daily production. The Kevin Field is less active than at any time since its real development began. This is due partly to the season and partly to the inadequate storage which prevents the marketing of production already secured.

CENTRAL OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Licking	0	0	0	0	1	0	1
Fairfield ...	0	0	0	0	0	4	4
Knox	4	100	0	3	2	2	4
Ashland	11	0	6	5	2	9	11
Medina	10	0	3	7	4	15	19
Lorain	2	0	1	1	0	10	10
Wayne	14	25	7	6	11	35	46
Richland ...	19	0	3	16	1	15	16
Vinton	1	0	1	0	1	0	1
Hocking ...	5	0	0	5	4	2	6
Holmes	3	43	3	2	10	16	26
Coshocton ..	0	0	0	0	1	1	2
Jackson	4	0	0	4	5	8	13
Athens	5	0	1	4	2	5	7
Meigs	0	0	0	0	2	1	3
Gallia	1	0	1	0	0	0	0

TRIMO

The Tools for hard work

They stand up under the strain of rough usage. Right materials — best design — every operating convenience—every feature of economy. TRIMO users buy for long service.

The All Steel Wrench

The

Monkey Wrench

has double the strength and durability of the ordinary monkey wrench. Unequalled for open work and general use. All steel (as shown.) Seven sizes. Have the real punch and kick in them.

Other tools having the Quality **TRIMO** Mark **are the**

Pipe Wrench — Pipe Cutter —Chain Pipe Wrench

Buy of your dealer or write

TRIMONT MANUFACTURING Co.

Roxbury [Boston], Mass

(4)

"Be Square Products"

Pioneers in the manufacture of High Grade Uniform Quality Western Cylinder Stocks known all over the world as

BIGHEART CYLINDER STOCKS

Bright Stock

Filtered Stock

Steam Refined Stock

Red and Pale Oils

Write, telephone or telegraph for quotations

Telephone Harrison 1586

Barnsdall Refining Company

Successors to Bigheart Producing and Refining Co.

910 S. Michigan Ave. CHICAGO, ILL.

New York Kansas City Los Angeles Tulsa Refinery: Barnsdall, Ok.

Lawrence ... 1	0	1	0	0	0	0
Huron 10	0	0	10	0	3	3
Total Nov. 95	173	27	63	46	126	172
Total Oct. 51	30	15	33	61	98	159
Difference 44	143	12	30	15	28	13

November developed into an extra good period for the Central Ohio fields, as there were a total of 95 wells completed, 5 of which were oil wells, with 173 bbls. The best gas well was found by the Logan Gas Co., on the Fred Feichter farm, in Hanover Township, Ashland County, and the next best by the Ohio Fuel Supply Co., on the Dixon farm, in Coal Township, Jackson County.

The best oil well was a test drilled by the American Oil Co. on the Veatch farm, in Section 1, Jackson Township, Knox County, estimated at 100 bbls. The addition of the new Shiloh Field in both Richland and Huron Counties, makes a much larger report than the recent months.

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wayne	3	80	1	0	0	8	8
Powell	0	0	0	0	0	5	5
Estill	2	30	0	0	0	4	4
Lee	0	0	0	0	0	2	2
Lawrence-Johnson ..	16	434	0	0	0	37	37
Johnson-Magoffin .	14	101	1	1	0	30	30
Allen	31	167	17	0	0	17	17
Warren	19	311	4	0	3	27	30
Barren	8	67	0	0	0	19	19
Simpson ...	2	12	0	0	0	3	3
Cumberland-Monroe ..	22	280	12	3	0	27	27
Clinton	0	0	0	0	0	2	2
Russell	0	0	0	0	0	7	7
Owensboro .	7	164	0	0	0	19	19
Hopkins ...	2	50	1	0	0	2	2
Owsley	0	0	0	0	0	6	6
McLean	1	0	1	0	0	1	1
Metcalf	0	0	0	0	0	11	11
Henderson .	2	0	2	0	0	1	1
Greenup	1	0	1	0	0	0	0
Crittenden .	1	0	1	0	0	0	0
Breathitt ..	0	0	0	0	0	1	1
Montgomery.	0	0	0	0	0	2	2
Rowan	0	0	0	0	0	1	1
Grayson ...	0	0	0	0	0	1	1
Elliott	0	0	0	0	0	3	3
Laurel	0	0	0	0	0	2	2
Hardin	0	0	0	0	0	2	2
Pike	0	0	0	0	0	1	1
Knott	1	3	0	0	0	1	1
Floyd	1	100	0	0	0	3	3
Marion	0	0	0	0	0	1	1
Martin	1	0	0	1	0	0	0
Harlan	0	0	0	0	1	0	1
Todd	0	0	0	0	0	1	1
Adair	6	0	0	0	0	1	1
Owen	0	0	0	0	0	2	2
Tennessee ..	8	19	6	0	2	26	28
Mississippi .	0	0	0	0	3	17	20
Alabama ...	0	0	0	0	0	11	11
Georgia	0	0	0	0	1	4	5
Florida	0	0	0	0	6	9	15
Total Nov. 142	1,813	47	5	16	317	333
Total Oct. 150	2,201	48	5	13	310	323
Difference 8	383	1	0	3	7	10

Work has been maintained well during November in the fields of the South, consisting of Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida. The completed work is at a standoff between the western and eastern Kentucky areas for the month.

The sensation of the month was the bringing in of a purely wildcat well by the Swiss Oil Corp., on Beaver Creek, near the town of Drift, in the southern central portion of Floyd County, in the Corniferous lime at a depth of 2,800 feet, the deepest known producer in Kentucky, which opens a new area for the companies to develop when the price of crude is right. This well when drilled in made a flow of 50 bbls. and was then shut in for two days and when opened put 100 bbls. in tanks.

The redeeming feature is the increase in development work over many counties in six States.

LIMA FIELD

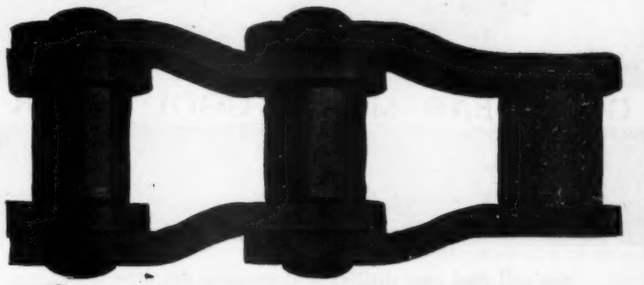
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	12	146	3	0	2	9	11
Hancock ...	10	262	2	0	0	8	8
Allen	7	142	0	0	0	5	5
Auglaize ...	4	42	1	0	0	2	2
Sandusky ..	0	0	0	0	1	2	3
Mercer	11	104	1	0	0	6	6
Van Wert ..	0	0	0	0	1	0	1
Seneca	2	2	1	0	0	3	3
Lucas	0	0	0	0	0	1	1
Ottawa	3	24	0	0	0	2	2
Darke	2	7	0	0	0	4	4
Hardin	0	0	0	0	0	1	1
Total Nav. 51	729	8	0	4	43	47
Total Oct. 60	735	13	4	3	68	71
Difference 9	6	5	4	1	25	24

An all around slump is noticeable in

(Continued on Page 126)

40 Years Experience In Chain Manufacture



JEFFREY

SS124 AND SS40 CHAINS

(Corresponding sizes, sometimes called 1030 and 1124) are especially made for the hard service this chain is required to perform in oil well drilling.

Write for Bulletin No. 308-B and Quotations

LARGE STOCK ALWAYS AVAILABLE

The Jeffrey Mfg. Co., 933-99 North Fourth Street Columbus, Ohio

Larkin Improved Sand Pump

(PATENTED)

LARKIN'S IMPROVED SAND PUMP (PATENTED)

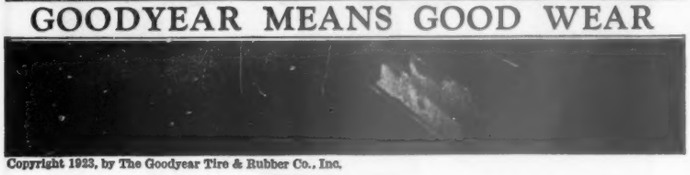
This illustration is the famous Larkin Sand Pump which is found in every oil field throughout the world.

Besides a full line of Drilling and Fishing Tools and Packers of all kinds and sizes, we manufacture the LARKIN Patent Never Slip Pipe Grip, which does away with the old-fashioned way of putting in casing with rope and tongs, and is cheaper, more durable and easier handled.

LARKIN & CO.

Butler, Pa., U. S. A.

GOODYEAR MEANS GOOD WEAR



Copyright 1923, by The Goodyear Tire & Rubber Co., Inc.

You will find your drilling and pumping are done more efficiently and economically when you equip with Goodyear Belts. These belts are built to give powerful and trouble-free service, under the most exacting conditions of oilfield duty.

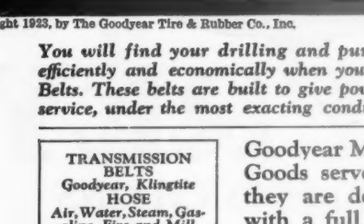
TRANSMISSION BELTS
Goodyear, Klingtite
HOSE
Air, Water, Steam, Gasoline, Fire and Mill
OIL SUCTION or DISCHARGE HOSE
ROTARY HOSE
PACKING
Asbestos and Rubber Sheet for both field and refinery service
PUMP VALVES
SLUSH PUMP SLEEVES
SWAB RUBBERS

Goodyear Mechanical Rubber Goods serve so well because they are designed and built with a full understanding of oilfield conditions and refinery duty. They stand up to the job and wear longer.

For service records, or for any other information about them, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

BELTS · HOSE · VALVES PACKING



THE Imperial makes tremendous savings on pipe line work.

The 15, 25, and 50-pound sizes are small enough to transport easily and quickly, yet large enough to insure an adequate supply of gas at a saving of 75% over the cost of acetylene in cylinders.

IMPERIAL
Portable Automatic Acetylene Generator

The Imperial Type B is the only portable acetylene generator made that is practical for work in the oil fields—especially for carrying along in laying pipe lines.

Even while being carried from place to place, it will generate gas 3 to 5 cents cheaper per cubic foot than you can buy it in cylinders. Eliminates delays and the expense of drayage and express.

Generation is entirely automatic. When you light your torch it begins—when you extinguish your torch it stops.

Carbide to water type; medium pressure; made in 15, 25 and 50-pound sizes.

Write for complete catalogue showing portable and non-portable Automatic Acetylene Generators and full information about Welding and Cutting Equipment and Supplies.

Imperial Brass Mfg. Co.
1208 W. Harrison St., Chicago, Ill

STANDARD MUST PAY RENTAL IN ADVANCE

NEW YORK, Dec. 3.—The Standard Oil Co., by a decision of the Appellate Division, lost the suit brought against it by Elmer E. Smathers, owner of the property at 18 Broadway, to determine whether under the 99-year lease of the land made by the Standard in 1920 it is compelled to pay the quarterly rent in advance or at the end of each quarter. The case has been tried five times.

The Appellate Division, in deciding that the rent must be paid in advance, upheld the contention of Mr. Smathers that when the lease signed was drafted finally the words "in advance" were omitted, although they were in his copy. Mr. Smathers contended he did not notice the omission, but counsel for the Standard Oil Co. declared that such an assertion was "little less than childish."

Caruthers Ewing, attorney for Mr. Smathers, conceded that the advance quarterly payment would mean a gain of $371,250 at simple interest for the 99 years of the lease. The Standard counsel insisted that the total payments for the 99 years would be $24,800,000, instead of $24,750,000 called for in the lease. It was stated that the company would have to make a quarterly payment of $62,500 on January 1, 2019, when only 15 days of the term of the lease remained, and the plaintiff would have the use of the additional $50,000 during the period of the lease.

Mr. Smathers' attorneys argued that all payments could be made within the term of the lease except the 396th, due January 1, 2019, when $41,666 would be due, whereas by the argument of the oil company the last payment would not be due until April 1, 2019, "a month after the lease has expired, and not within the term of the lease."

PESQUEIRA WELCOMES AMERICANS TO MEXICO

"Consideration of Mexican conditions from an economic and international viewpoint," says Roberto V. Pesqueira, of Mexico City, formerly financial agent of the Mexican Government in the United States and high in political circles in that country, "is at present vastly more interesting and important than discussion or speculation over purely political conditions there. The presidential campaign in Mexico may be expected to progress and end as your presidential contests in the United States do, with a display of intense public excitement and interest, ending in acceptance by the minority of the will of the majority, as expressed by their ballots. The existing government can be depended upon to preserve order and to guarantee that the legally chosen candidate will be seated.

"With resumption of official relations between our countries and of interest payments on the national indebtedness and with settlement of contentious issues, it is inevitable that a general economic revival will take place in Mexico. We, as Mexicans, are looking forward hopefully and confidently to an era of prosperity as well as of tranquility. American participation in profitable development of our magnificent natural resources will, we expect, be notable."

SHALE AS FUEL IN ESTHONIA

Fuel-shale (powdered fuel) is one of the principal products of Esthonia. Although utilization of this mineral product as fuel was only commenced during the acute crisis of the war, the shale industry occupies now a leading place among the activities of the country. Fuel-shale is employed extensively on the railways, and is also generally in use for heating ovens in the copper and iron industry. It is the only fuel employed for heating rotary furnaces for the manufacture of cement. It is also submitted as elsewhere, to the process for the extraction of crude oil.

Guaranteed By 30 Years of Experience

Every NO-CO-RO Ball and Seat is backed by thirty years of experience in manufacturing oil well pumping equipment.

Since being put on the market, NO - CO - ROS have consistently proved that they will stand up under the worst acid water and sand conditions. Hard work cannot break them.

Made from a NO-CO-RO alloy steel, NO-CO-ROS are absolutely guaranteed against rust, corrosion or imperfect fits. They will give many times the service of any other make.

Test them on your own well. You can order from your supply house or direct from us.

Manufactured by
NORRIS BROS., Inc.
Manufacturers of Oil Well Pumping Equipment
ROBINSON, ILL.

118

NORRIS

Persian Oil Lands Open to Americans By Parliament Act

WASHINGTON, D. C., Dec. 3.—The Persian Legation has made public the terms of an act of the Persian Parliament, under which an exclusive concession to exploit petroleum, asphalt, natural gas and related products in the four northern provinces of Persia would be granted to "an independent and reputable" American company. Right of option upon a fifth province, now held in reserve, would also be allowed to the concessionaire if the Persian Government determined to grant a concession to foreign interests for its exploitation.

The act provides that the granting of the concession for the four provinces shall be conditional upon arrangements for a loan of at least $10,000,000 for the Government of Persia, through American banks of recognized standing, the loan to result in the strengthening of the credit of Persia in the United States.

The action of the Persian Parliament in setting forth the terms of the proposed concession follows negotiations between the Persian Government and two different American companies—the Standard Oil Co. of New Jersey and the Sinclair Co. —both of which submitted proposals. The Anglo-Persian Oil Co., a British concern with Government backing, which has long enjoyed monopoly rights in the rich petroleum fields of Southern Persia, also was eager to obtain the concession for the Northern provinces, and at one time advanced a claim to those districts, based on prior incomplete negotiations between the Persian Government and a Russian concern, the individuality of which has been consistently maintained. The Persian Government and people, however, were unwilling to allow the British group to get a further hold upon their rich resources and are determined that the Northern concession should go to Americans.

Based on Standard Offer

The present act of Parliament is based on a careful study of the proposals of the Standard of New Jersey and the Sinclair group, and is designed to cover the principal features of those proposals, as well as to protect the interests of the Persian people. Negotiations are just beginning with various American groups for a concession on the basis of this act.

In addition to the right to exploit and refine petroleum, asphalt, natural gas and related substances, the concessionaire would have the nonmonopolistic right to market these substances within the boundaries of Persia.

The concession would be for a period of from 40 to 50 years, its exact duration to be defined by discussions between the concessionaire and the Government.

Within six months after the concession becomes legally effective, the concessionaire must send experts to Persia to make geological researches, and within three years necessary maps and reports of these preliminary researches must be furnished to the Government. Within eight years of final ratification, the concessionaire must spend at least $800,000 gold for wages, supplies, necessary engineering work, exploration, drilling etc., at least $300,000 to be spent within the first six years, and the total of $800,000 within the first eight years.

Within this eight-year period the concessionaire must submit to the Persian Government a list of lands selected for exploitation, the "selected areas" in each province not to exceed 15 per cent of the total area of the province, and the remaining lands to be returned to the Government gratuitously.

Drilling operations upon at least two oil wells must begin within six years after ratification, and thereafter drilling must be undertaken upon at least one new well every two years. These wells must be continued to a depth of at least 2,000 feet unless oil is found in commercial quantities at shallower depth.

Should the finding of oil prove insufficient for commercial purposes the concessionaire may surrender the concession after three years of exploration work, but in case of such surrender he is barred from all further rights to exploit the "Four Provinces."

No Transfer to Foreigners

The act specifically forbids transfer of the concession to any foreign Government or foreign company or foreign citizens, but provides that the concessionaire may organize one or more companies under the laws of Persia or the United States, and may transfer all or part of its rights to such company or companies.

The concessionaire must refine in Persia enough of the petroleum produced to satisfy the needs of local consumption, the purchase price of the refined products to be at a price of cost plus 10 per cent. The royalty to the Persian government is to be at least 20 per cent of the net profits of the company or companies formed, and if excess profits are derived from the operations the Government's share is to be progressively increased, ranging from 21 per cent when the profits are between 60 and 75 per cent of the invested capital to 28 per cent when profits are in excess of 115 per cent of the invested capital.

Upon organization of the first company, the concessionaire must deliver to the Government gratuitously a percentage of shares equivalent to not less than £30,000. The Persian Government is to have representation on the board of directors of any companies formed to the amount of one-fifth of the vote of the directors.

SEMI-DIESEL ENGINE REPORTED IN DEMAND

The position of what is termed the semi-Deisel engine was interestingly referred to recently by Lloyd's List. Evidence was available which showed that the demand for this type of engine was improving, and that several new types had been lately brought on the market. There is, says Oil Engineering and Finance, no other type of marine motor on the market which can exactly fulfill the purpose for which the semi-Deisel is employed, for the propulsion of all types of commercial craft, from the smallest up to comparatively large coasters. Lubricating oil consumption is steadily decreasing with improved design, and the same may be said of flexibility, especially when the variable jet is employed. Whether the semi-Deisel type can be operated by unskilled labor, as is the case with petrol and paraffin motors, is a subject upon which varying opinions have been expressed, but unquestionably it is the most "foolproof" of heavy oil engines. The sizes of semi-Deisel engines have increased rapidly, and a large boat has been fitted with twin-screw machinery totaling 1,000 b.h.p. In a few weeks' time trials will be run of a 4,000-ton cargo boat with still higher powered engines, and if this vessel is successful the semi-Deisel motor may enter into competition with the Deisel engine for motor ships of moderate tonnage.

TARIFF ON AMERICAN OIL

Under the head, "The British Oil Game," the Texaco Star carries an editorial which reads in part: "Tariff discriminations actually met with as applied against American goods in general, and petroleum products in particular, arise mostly in British Colonial possessions. For instance, Australia, New Zealand, South Africa, British Guiana, and the British West Indies grant entry of goods coming from other entities of the British Empire either free of duty or a rebate of the tariff rate appreciably lower than the tax imposed on goods from foreign countries. This practice applied to the oil industry obviously means a discrimination in favor of large oil companies controlled by British capital. The United States has imposed no import duty on petroleum products to meet this discrimination against American goods in British dependencies. Hence, in these countries we are placed in a position where the British concerns can undersell us."

Davis brings accurate regulation

You are looking for a gas pressure regulator that you can install and forget about—and here it is.

The Davis Gas Pressure Regulator will bring you accurate regulation at minimum cost. It is highly sensitive and will maintain a steady service pressure, without variation regardless of the fluctuation in the high pressure. Steady action is insured by an oil dash pot which prevents vibration of the lever. No outside piping is necessary when installing in the pipe line, thus the cost of installing is minimum. A double bevel seated type of disc insures tight closing and being balanced it is unaffected by internal pressure changes when closed.

The G. M. Davis Regulator Company, 409 Milwaukee Ave., Chicago, will be glad to send you a catalog on valve specialties, that will solve many of your problems.

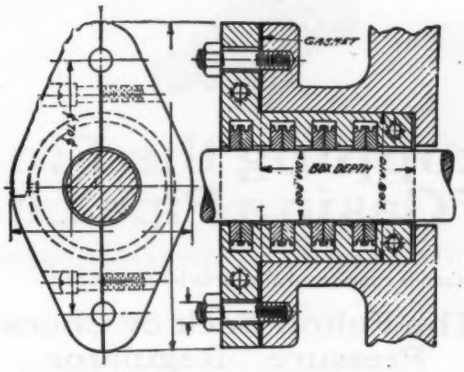
DAVIS VALVE SPECIALTIES
STEAM SAVERS SINCE 1875

409

France Metallic Packing

For Any Pressure

Air, Gas, Steam or Ammonia

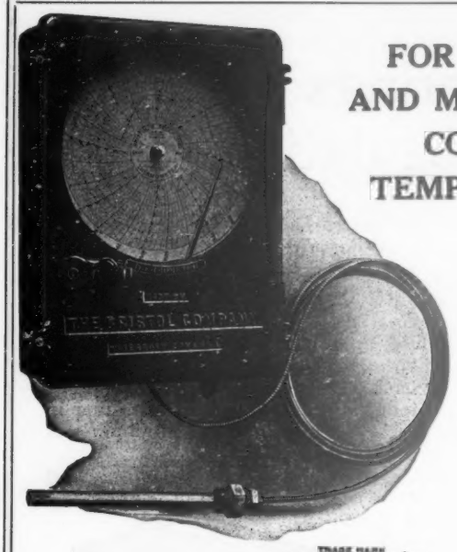


GAS COMPRESSOR PACKING

Made with either round or oblong gland as required.
$15 per inch dia. of rod.

It is furnished on approval and guaranteed to give satisfaction. Send for catalog and list of other types.

FRANCE PACKING COMPANY
6612-18 Tacony St., Philadelphia, Pa.
Western Supply Co., P. O. Box 1824, Tulsa, Okla.
Branches: A. C. Stucky, 2221 Warwick Blvd., San Antonio, Texas



FOR SECURING AND MAINTAINING CORRECT TEMPERATURES

You need a recording thermometer. Especially where the time element is important — like in the oil still.

TRADE MARK
BRISTOL'S
REG. U.S. PAT. OFFICE

Recording Thermometers

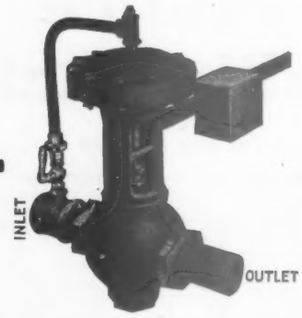
should receive the preference over the indicating type of instrument. Because—the charts are marked off in time arcs, so you can tell just how long it takes to reach a certain degree of temperature and how long it is maintained.

With a glance at Bristol's Thermometer, the operator can tell what temperature conditions are now, what they have been and in what direction they are pointing. It is unnecessary to stop and take readings as with an indicating instrument.

Ask for Catalog M-1302

THE BRISTOL COMPANY
WATERBURY, CONN.

Boston New York Philadelphia Pittsburgh Detroit
Chicago St. Louis San Francisco



Stopping the Flow of Gas in a Pipe Line

When the pressure has fallen to a lower point than is considered advisable by means of

The Fulton Back or Check Pressure Regulator

This regulator is placed in the pipe line and automatically controls the flow of gas.

The pressure at which the regulator is desired to operate can be varied as may be desired.

All back pressure regulators are provided with a lever which is balanced on a knife-edged fulcrum and supports the valve by means of a toggle connection, which reduces friction and insures quick response to the slightest change of pressure.

Write for Descriptive Circular and Prices

The Chaplin-Fulton Manufacturing Company
26-36 Penn Avenue Pittsburgh, Pa.

FIELD OPERATIONS DURING NOVEMBER

(Continued from Page 123)

the old Lima Field of northwestern Ohio, brought about by inclement weather conditions, and it looks as though a majority of the operators will take a long needed rest, until early spring.

During November 51 wells were completed, with a new production of 729 bbls., a decline of 6 bbls., showing the November wells were better producers. New work under way is what tells the story, as the close of November showed a net decrease of 24.

ILLINOIS FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	2	40	1	0	0	4	4
Cumberland	0	0	0	0	0	1	1
Crawford	1	0	0	1	0	3	3
Lawrence	3	105	0	0	0	0	0
Jasper	1	0	1	0	0	0	0
Monroe	1	4	0	0	0	4	4
Coles	0	0	0	0	0	1	1
Wabash	0	0	0	0	3	3	6
Jackson	0	0	0	0	2	2	2
Jefferson	0	0	0	0	0	1	1
Union	0	0	0	0	0	1	1
Morgan	4	0	0	4	0	0	0
Total Nov.	12	149	2	5	3	20	23
Total Oct.	11	74	6	5	3	20	23
Difference	1	75	4	0	0	0	0

Little is being done in any section of the Illinois Field at this time, as conditions are bad from slight rains and the low price of crude. A substantial advance in the price of crude will bring about a large amount of wildcat work over the State, as chances are favorable for the opening of numerous pools. The outstanding feature of the month was the bringing in of some nice gas wells in Morgan County, west from Springfield, the State capital, that may mean much for that section, providing the wells hold their production. The shallowness of the sand producing the gas is against a long-lived production, the gas being found at less than 400 feet. The wells show a tremendous volume of gas for such shallow holes, as one of them is estimated better than 5,000,000 feet.

During November the only oil well of note was found in the famous McCloskey sand on the McCloskey farm, by the International Oil & Gas Co., in Dennison Township, Lawrence County, doing 100 bbls.

INDIANA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Jay	1	6	0	0	0	11	11
Adams	2	4	0	0	0	0	0
Grant	1	15	0	0	0	0	0
Gibson	2	20	1	0	0	6	6
Pike	3	0	2	1	0	0	0
Sullivan	0	0	0	0	0	5	5
Knox	0	0	0	0	1	1	2
Total Nov.	9	45	3	1	1	23	24
Total Oct.	14	291	3	1	0	30	30
Difference	5	246	0	0	1	7	6

The Trenton Rock and Princeton fields of Indiana made a very poor showing during November, as there were but 9 wells completed, with 3 dry holes, 1 gas well and 5 oil wells with a new production of 45 bbls. There was no change in the number of dry holes and gas wells. During the month a total of 27 old wells were pulled out and abandoned, some of them have been producing for close on to 25 years.

In new work under way at the close of November there were 1 rig and 23 wells drilling against 30 drilling wells at the close of October, a decrease of 6, which is not bad, considering conditions.

VENEZUELAN CRUDE SHIPMENTS

A cargo of Venezuelan crude which was shipped to Perth Amboy, N. J., by Curacao Petroleum Co., on October 2, was the third such shipment during the past three months. The shipment totaled 68,000 barrels, or about 9,715 tons.

SHELL IN CANDLE DEAL

Lever Brothers interests, the British soap makers, are reported to have combined with the Shell Co. and Asiatic Petroleum in the formation of a candle manufacturing syndicate with a capital of £8,500,000.

BUYING BALLS AND SEATS IS BUYING SERVICE

Buying Anything But the Best Is False Economy — a Waste of Money.

Steelex Balls and Seats and Bronzex Balls and Seats will give you the service you have a right to expect.

To distinguish them Steelex are packed in red box, Bronzex are packed in yellow box.

Both Sealed With Our Gold Label

If you forget the name remember the package

THE CHARLES N. HOUGH MANUFACTURING CO.
"Where the Reliable Oil Well Supplies Come From"
Franklin, Penna.
PUMPING EQUIPMENT

Northern Oil Information Bureau
Shelby, Montana

Complete weekly drilling and operating report of Kevin-Sunburst field mailed to any address, $10 for four reports. Maps and logs for sale. Best of references.

We maintain a geological, land and field departments, all in expert hands

The men who read the Classified Wants Section of The Oil and Gas Journal control a large percentage of the buying power of the oil and gas industry. Let them see your advertisement in the Classified Wants Section.

Cummins
Working Barrels

"DUPLEX"
for Sand and other STUBBORN Conditions

—

"SIMPLEX"
for NORMAL Wells

—

"NICHROME"
Steel Balls and Seats for ANY Condition

All Sold on a Money Back Guarantee of Super-Superiority and Solid Satisfaction

Will You Spend a Dollar to Save Two?

Order Now!

Dealers Everywhere
or Direct from

Cummins Working Barrel Company, Inc.

Syracuse, N. Y.

KONSET
Way Out West

—where oil wells and bathing beauties are running wild—KONSET is keeping a level head and batting 1000. Ask the next "big" oil man from California that you meet if KONSET is used with cement in setting casing out that way. "Sure Mike," he will answer. "It does the work in 72 hours—we've been using it a long time out there." He's right—they have.

Write for Name of Nearest Distributor

THE SULLIVAN CO.
MEMPHIS, TENN.

Ford Looks to China As Car Market of The Coming Years

"Ford Motor Co. is entering on a construction program which will total $110,000,000 and within four months will have a capacity for 10,000 motor cars and trucks a day," Henry Ford announces.

"Part of this construction," he said, "will be in our Detroit plants and the remainder in other cities. We are expanding all over the United States because we believe that no such thing as a saturation point exists. Until the population stops growing and the people stop building roads and stop desiring to ride instead of walk there will be a steady demand for automobiles.

"Aircraft development will follow soon but it will never replace the automobile. No really useful thing is ever displaced."

Both the Highland Park and River Rouge plants are to be increased, he said.

"Our plant in Manchester is making 85 per cent of all the parts that go into Ford cars and trucks turned out in England and soon we will be making 90 per cent of the parts over there. We have not gone in for making the small English cars, even though they consume less gasoline, because we have found the Englishmen want pep and power. We are selling between 40,000 and 50,000 Fords a year in England and it looks like we will sell many more over there."

Ford thinks Germany will be in trouble a long time. The best future market is China. The Chinaman, he said, will build his own roads if he can get the cars. "Automobiles will develop China quicker than railroads or missionaries. The Chinaman loves to ride so well that he will ride one way, even if he has to walk back."

DENY INTERVENTION IN RED RIVER CASE

WASHINGTON, Dec. 3.—The United States supreme court denied the motion of Charles West of Tulsa, former attorney general of Oklahoma, for leave to intervene in the Red River boundary suit, in behalf of himself and to have his rights to lease the south half of the river, now Government property, determined.

West claimed right to a permit to explore the south half of the stream under the mineral leasing act of 1920. The petition also asked the court to modify its opinion of May 1, 1922, to the extent of declaring that all rights upon property owned by the Government, validly acquired before passage of the Red River leasing bill last March, and acquired under terms of the act of 1920, were not affected by the court's opinion of May 1.

Frederic A. Delane, receiver of the Red River property, named by the supreme court, submitted his eleventh report, showing total income for the three and a half years of his receivership to be $12,406,522. The receiver is now holding assets totaling $4,232,027, of which sum $301,242 is cash on hand and $3,924,804 represented in United States treasury certificates and bonds with accrued interest.

Production of 145 wells east of the Grandfield bridge, and 70 wells west of the Grandfield bridge, comprising the receivership area, amounted in September to a total of 48,106 barrels, or an average daily production of 1,603 barrels. This is about one-fifth the average daily production at the time the court took charge of the area. Wells west of the bridge are the heaviest producers.

Attention is called in the report to the medial line survey by the boundary commissioners under orders from the court, the cost of which to date of the report amounted to $1,022.

PRATT & CADY VALVES

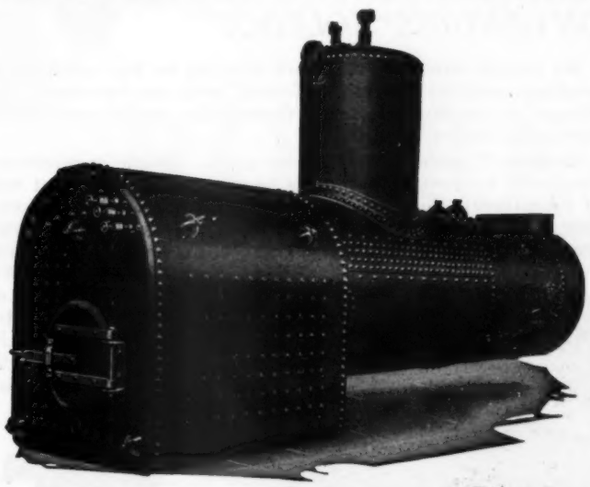
Built for all water, steam and oil services where the temperatures do not exceed 500°F.
Their rugged design and renewable parts assure long and reliable service.
Specify "P. & C." valves.

Reading Steel Casting Co., Inc.
Pratt & Cady Division
An Associate Company of the American Chain Company, Incorporated
General Sales Office: Bridgeport, Conn.

Boston, Charlotte, Chicago, Cleveland, Detroit, Hartford, Houston, St. Paul, New York, Philadelphia, Pittsburgh, San Francisco, Rochester

Stocked by: Norvell-Wilder Hardware Company, Beaumont, Houston, Mildred and Shreveport
Grinnell Co. of the Pacific, Los Angeles, Cal.

Sistersville A. S. M. E. Code Boiler

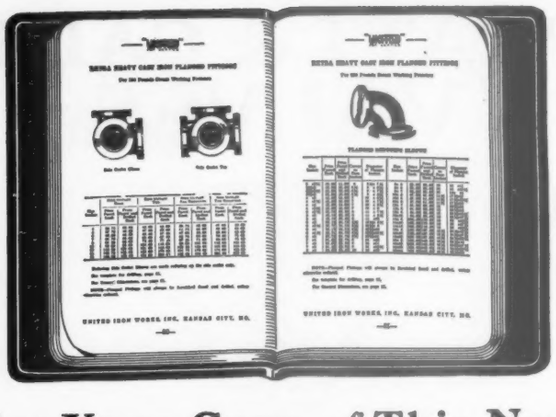


Also Locomotive Type Portable Boilers

TANKS

Oil, Gasoline and Chemical Storage
Capacities 4,400 to 20,000 Gallons
High and Low Pressure Accumulator
Bolted 100 to 2,000 Barrels
Electric Welded, 40 to 100 Barrels
Steel Plate Construction
Prices and Catalog mailed upon application

Sistersville Tank & Boiler Works
Office and Works, Sistersville, West Virginia



Get Your Copy of This New "UNITED" Fitting Catalog

Every oil producing and refining company should have a copy of this **new, big, valuable** loose-leaf catalog. Besides showing a complete line of Fittings and Oil Producing and Refining Equipment manufactured by this company, it also contains much valuable information for the oil industry and its related branches.

Write today for your copy of this valuable catalog. It will be promptly sent, without obligation.

UNITED IRON WORKS, Inc.
KANSAS CITY, MO.
Tulsa **Dallas**

"UNITED" IRON WORKS INC. SERVICE

919

YOU CAN DEPEND ON GENUINE "TOLEDOS"

"TOLEDO" TRADE-MARK REGISTERED

No matter how hard the work may be, or how severe the working conditions, genuine "Toledo" tools can be counted on always to render the same dependable service you have learned to expect from them.

Genuine "Toledo" tools have no equal. Simple in construction, with no complicated parts to clog with dirt or get out of adjustment, they are durable. Light, compact and portable they may easily be taken to the job anywhere and operated. They are tools of no regrets. When ordering look for the name and trade-mark, above, and accept no substitutes. Only GENUINE "TOLEDOS" will give you "Toledo" service.

This is the "Toledo" No. 2 tool. It threads 2½" to 4" pipe, is light, compact and, as shown in the illustration, threads pipe anywhere.

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio
New York Office: 50 Church St.

Americans Drilling Two Wells at Baku Plan for Six More

Robert Law, Jr., former chairman of the International Barnsdall Co., says two wells are being drilled in the Baku fields, Russia. Work was started the latter part of September with about 20 American drillers in the field with rigs.

"We are planning to drill about half a dozen wells or more during the winter," said Mr. Law. "It will depend on how quickly we get the rest of our equipment from America. We originally had an order with the Lucey Manufacturing Co. for about $1,000,000 worth of equipment. Considerable of this order was delivered before the company went into receivership. The company is still making some deliveries and the rest of the equipment will have to be obtained elsewhere.

"Mr. Day, president of the company, who has just returned from Russia, has complete confidence in the Russian authorities and they comply with his wishes. To further cement this confidence we are drilling one well by American methods and one by Russian and we are letting the Russians see which is the better way.

"We have about 400 square miles of the richest oil lands in the world and expect to get heavy production. We have an 8-inch pipe line running from Baku on the Caspian Sea to Batoum on the Black Sea which is the oil port of southeastern Europe, where tankers have an easy access."

Mason Day, president of the Barnsdall Corp., who returned on the Majestic after completing arrangements with the Russian Government to work the Grosny fields on a contracting basis, said these fields include 2,000 acres, all of which have been proven. Mr. Day said 50 engineers in the Baku section are engaged in drilling wells around one well which is producing 7,200 bbls. per day. Mr. Day would neither affirm nor deny the report that he was the foreign representative for the Sinclair Oil Corp., but admitted that the Sinclair interests owned large blocks of of stock in the International Barnsdall Corp.

"We will start operations in the Grosny Field in about six months," Mr. Day added. "At the present time the field, which is nationalized by the government, is producing 15,000,000 bbls. of oil annually. The production of the Baku Field amounts to 35,000,000 bbls., or about 50 per cent of normal."

HAPPY-GO-LUCKY DAYS IN OIL INDUSTRY GONE

In a recent issue the Chicago Journal of Commerce published the following editorial:

Fierce quarrels have too long been a part of the daily routine in the oil industry. All industries have passed through such periods; and the reason is that all industries when new have been regarded as games. An industry in its youth is a mad scramble for immediate riches. It is a Klondike rush. It is not a business; it is the "auto game," or the "oil game."

What has happened in oil is simply that it has ceased to be a game, and has become an industry; but that many of the men in it have remained in their old frame of mind. They have not developed an appreciation of the need for stabilizing the industry.

In recent history seven grand pools have been opened at about the same time. These included the three fields in California, the Powell in Texas, the Smackover in Arkansas, and the Burbank and Tonkawa in Oklahoma. If the industry were on a stable basis and these seven fields had been discovered at about the same time, would they have been allowed to reach their maximum production almost simultaneously?

In a mad race for immediate profit, the seven grand pools were opened. They flooded the market. As a result, crude

Tyden Seal for Protection

The Tyden Self Locking Seal insures absolute seal protection for storage tanks and pipe lines.

Placed on valves at tanks and pipe lines, it embodies, among others, following features:

Cannot be removed without being destroyed.

Each seal bears company name and consecutive number.

Requires no press or sealing iron.

Each seal is complete self locking lock.

Adopted by Treasury Department of the United States Government for sealing bonded freight in connection with customs.

International Seal & Lock Co.
Hastings, Mich.
Chicago Office: 617 Railway Exchange

THE PUMP THAT WILL HELP YOU SELL

This is the pump that will prove its value to every progressive oil marketer who is planning for bigger sales.

It has been designed in accordance with combined viewpoints of the successful marketer and experienced engineer and the finished product aptly illustrates the old truth that "Two Heads Are Better Than One."

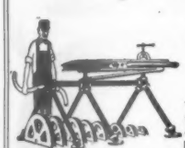
Get full information on this pump and you will find it fills every need experienced in gasoline distribution.

Write today for Bulletin 66

GILBERT AND BARKER MANUFACTURING COMPANY
Springfield, Mass.

STANDARD OIL
INDEPENDENT OIL
STOCKS
BOUGHT-SOLD-QUOTED
Francis, Bro. & Co.
—Established 1877—
MEMBERS
New York Stock Exchange
New York Curb Market
New York Cotton Exchange
N. Y. Coffee & Sugar Exchange
Chicago Stock Exchange
Chicago Board of Trade
St. Louis Stock Exchange
St. Louis Merchants Exchange
KENNEDY BUILDING
TULSA, OKLA.
INQUIRIES INVITED
Telephones
Cedar 3212 Cedar 3213

PRODUCERS AND REFINERS CORP.
Producers
Refiners
Marketers
Sales Offices:
Denver Chicago
Tulsa
PARCO PETROLEUM PRODUCTS

Cold Pipe Benders

Standard of the world
HAND AND MOTOR OPERATED
14 sizes of Machines.
What it costs to bend pipe our way per bend:
1" pipe, 5 cents. 4" pipe, 25 cents.
2" pipe, 10 cents. 6" pipe, 60 cents.
8" pipe, $1.00
Send for catalog
American Pipe Bending Machine Co.
25 Pearl St., Boston, Mass.

F. W. FREEBORN
ENGINEERING
CORPORATION
ENGINEERS, APPRAISERS,
CONSTRUCTORS, MANAGERS
For
Oil and Industrial Properties. Valuations for Income Tax, Re-organization, re-financing and Mergers.
General Offices: Mayo Bldg.
TULSA, OKLAHOMA

NEW OIL MAP
Nocona District
Covers an area about 15 miles square in north central Montague County, Texas. Shows land and lease owners, towns, railroads, highways, pipe lines and drainage and locations of all wells in and drilling. Scale 2,000 feet 1 inch. Size 42x42 inches. On cloth, $6; paper, $3.50.
HEYDRICK MAPPING CO.
Wichita Falls, Texas

has been forced down to such a low price that there is little in it for the producer; and refined has been forced down to such a pitiable level that there is nothing in it for the refiner.

The oil industry must be stabilized. The old happy-go-lucky days are gone forever. Geologists have shown an amazing ability to forecast the oil-producing possibilities of any given area. There is still an element of chance, but the men of science are rapidly reducing it. This being the case, the industry begins to take on the fundamental character of most industries. Like them, it must be managed in business-like fashion.

The industry numbers some of the ablest executives in the country. Until recently they had been unable to establish right contact with the rest of the industry, which was still possessed of the old feverish psychology. But events have begun to teach their lesson, and so at last we find a price reduction put into effect without the usual name-calling.

For a moment there is an atmosphere of peace. Let the opportunity be seized by leaders of the industry to stress the need for tolerance and cooperation. What is needed above all is a new state of mind. It is a time for leaders to lead; and it is a time for the rank and file to show restraint of thought, sanity of judgment, a broad comprehension of the other fellow's needs and aims.

Advice of Dentist As Drill Hits Spot Has Analogy in Oil

CASPER, Wyo., Dec. 3.—Complaints are becoming numerous here from people in other sections of the country that oil stocks in some companies operating in this region are not paying dividends as predicted by the stock salesmen. It appears that some firms have been organized with holdings near production and on the strength of the tracts lying near production, large blocks of stock were sold to the public. The money went for officers' salaries in the main and the stockholders are wondering where they get off.

Regarding the writing of letters to the office of The Oil and Gas Journal at Casper on such matters, most of the companies named in the correspondence received are unknown in this region, but on looking up the lands, it is found that such tracts are usually held in a name of some officials of a corporation named and that possibly a well has been drilled deep enough to hold the tract for 20 years under the terms of the Leasing Bill. The only advice that can be given is the same the dentist gives when the drill hits a sore spot, "grin and bear it."

BUYS MARACAIBO LANDS

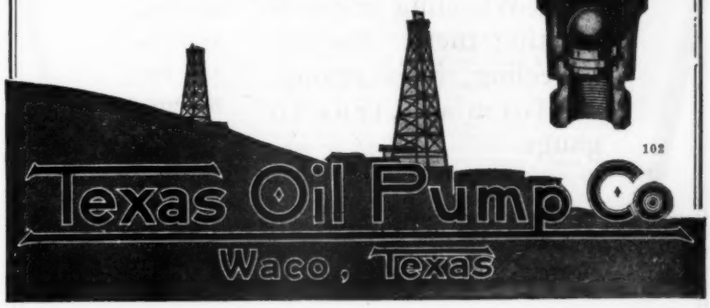
South American Gulf Oil, a subsidiary of the Gulf Oil Corp., has notified the Maracaibo Oil Exploration Corp., that it has exercised its option to purchase 64,420 acres of Maracaibo's oil lands in Venezuela. The Gulf Co. had until November 20 to examine and select this acreage. A total of 100,000 acres is involved, but the remaining 35,000 odd acres is in unexplored areas. The Gulf Co. has until late in December to make selections on this acreage. The sale of land by Maracaibo is under an arrangement where the Gulf Co. paid cash for the acreage with Maracaibo retaining a royalty interest.

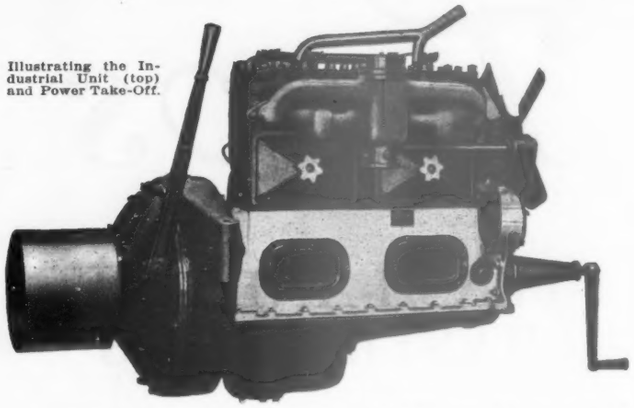
HOW OIL HELPED CANAL

In the annual report of the Panama Canal, Governor Morrow reports the canal nets $12,063,880. This great increase in traffic was due to the development of the oil fields in California, furnishing 60 per cent of the eastbound cargo. Tanker tonnage in either direction is approximately as great as all other commercial tonnage combined.

Tycos
FLASH-AND-FIRE TESTING CUPS
For Illuminating Oils—
Open Fire-Tester
Elliott Closed Cup
Foster Closed Tester
Abel-Pensky Closed Cup
Abel Closed Oil Tester
For Lubricating and Fuel Oils—
Pensky Martin Closed Cup
Cleveland Open-Cup Tester
Engler's Viscosimeter
Redwood's Viscosimeter
Other Tycos Laboratory Instruments are:
Tycos Distillation Apparatus
Stop Watches
Engraved Testing Thermometers
Send $1.00 for Tycos Mineral-Oil Tables. Write for Catalog Part 1700, showing complete line of Tycos Temperature Instruments for Indicating, Recording, or Controlling temperature in the oil industry.
Taylor Instrument Companies
Rochester, N. Y., U. S. A.
Canadian Plant: Tycos Bldg., 110 Church St., Toronto
There's a Tycos or Taylor Temperature Instrument for every purpose
918

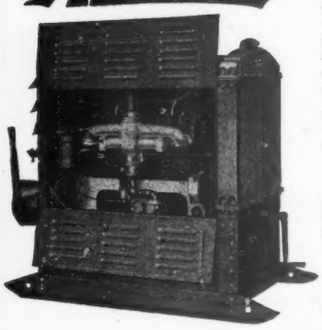
An Outstanding Feature
of the
ROARK
STANDING VALVE
The Roark valve is regularly furnished with a California special type ball and seat which will operate at any speed without pounding the seat, thus giving longer life than the ordinary ball and seat.
The seat used is of standard size and the seat frame is renewable and also very inexpensive.


102
Texas Oil Pump Co
Waco, Texas



Illustrating the Industrial Unit (top) and Power Take-Off.

Waukesha
TRADE MARK



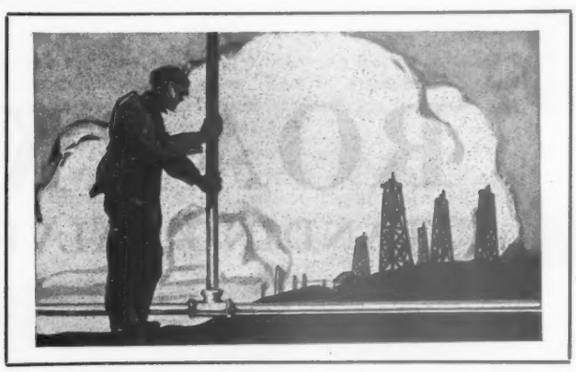
Pumps and drilling machinery, operated by the Waukesha Industrial Unit, continuously deliver their full capacity. Waukesha, built for work, enables you to maintain this new efficiency and at a consistently low operating cost.
Its power is capable and dependable at all times—under ordinary conditions, in emergencies. Its long-period, economical performance is assured by a manufacturing skill, seasoned through long years' experience building America's finest "heavy duty" motors.

Write today for complete details.

THE WAUKESHA MOTOR COMPANY
Waukesha, Wisconsin

The World's Famous Builders of Bus, Truck, Tractor and Industrial Motors Exclusively

SALES OFFICES
1824-1825 Aeolian Bldg., 33 W. 42nd St., New York. Telephone: Longacre 5784
503-505 Capitol Theater Bldg., Madison Ave. Side, Detroit. Telephone: Cadillac 4482



In the field, on the line, at the refinery — wherever pipe needs are to be met, Wheeling Pipe is meeting them. Specify Wheeling, it is strong, uniform and true to gauge.

Rotary Pipe
Drive Pipe
Drill Pipe
Line Pipe
Standard Pipe
Tubing and Casing

WHEELING STEEL CORPORATION
WHEELING, W. VA.

British to Control Anglo-Persian Even If Shell Buys Stock

Reports of negotiations by the Royal Dutch-Shell Co. for the holdings of the British Government in the Anglo-Persian Co. have been confirmed in the British Parliament by Austin Chamberlain, who said the negotiations had been under consideration for some time, but no decision had been reached, and probably will not be until after the election.

The British Government's holdings in Anglo-Persian consist of 5 000,000 ordinary shares, 1,000 first preference of £1 each and £119,000 of debenture stock. These cost the Government £5,200,000.

It was emphasized in the discussion in Parliament that no action was contemplated which would endanger the fuel oil supply of the British navy and it was reported that the Government was able to give this assurance because the Burmah Oil Co., another British concern, holds first option on the Government's holdings of Anglo-Persian stock and would transfer to Dutch-Shell only a portion of these holdings if the deal goes through. One possibility is that the Shell will market Anglo-Persian petrol and British Mexican Petroleum its fuel oil. The price reported set for the Government's holdings is £12,000,000.

The London Oil News says: Two versions of the proposed deal are in circulation. One is the sale outright to the Royal Dutch and Shell group; the other is the putting of the Government's shares into a combine composed of the Royal Dutch and Shell group, the Burmah Oil Co. and the Anglo Persian. For some years statements have been made in America and elsewhere by responsible persons that the British Government was allied with the Royal Dutch and Shell group. Would not such an event as this transfer prove beyond dispute to those who have all along been asserting British Government interest in Royal Dutch that they were right? The British Government has denied these statements repeatedly. But if this deal were to go through would not those denials be looked upon as disingenuous and would not American respect for the word of honor of the British Government undergo a serious shock?

The action of the Royal Dutch and Shell group in relation to Russia has, says our London contemporary, alienated it from the other foreign companies and groups who have oil interests there. These independent concerns exhibit a distrust of the Royal Dutch and Shell founded upon their experience of it during the last two or three years. Rightly or wrongly they accuse the Royal Dutch and Shell of not playing the game and that this contention of theirs is a serious one, is plain from their having formed the Inter Allied Oil Committee, which includes British, French and Belgian oil interests in Russia, but deliberately excludes the Royal Dutch and Shell. Were the Anglo-Persian control to pass to the Royal Dutch and Shell Group the odium at present supported by the latter would extend to the great British company. For some reason or other the Royal Dutch and Shell group is very unpopular among other European oil concerns and that drawback would, of necessity extend to any company it absorbed.

"We have heard it said," the London Journal continues, "that the real reason of the Royal Dutch and Shell attitude concerning Russian oil was that it desired to restrict production and prevent competition with its own oil fields. The same assertion has been made with regard to Egypt and to Trinidad. Is Persia also to come into the list? A larger case is that of Mosul, or the Mesopotamian concessions. The feeling of the Turks is exceedingly bitter. Great Britain has strenuously supported the Anglo-Persian in Mosul. If Anglo-Persian control is sold to the Royal Dutch and Shell there can be no valid reason why the British Government

Christmas Is Coming

You will want to give a present to your friend; a gift that will help him in his desire for advancement; a gift worthy of his intelligence.

The Oil and Gas Journal will make an excellent gift. It will help your friend and throughout the year it will be a reminder of your friendship.

Send your friend's name and complete address to us, with your remittance, and The Oil and Gas Journal will be mailed to him every week from Tulsa, Okla.

We will advise him of your thoughtful remembrance.

The Oil and Gas Journal
Tulsa, Okla.

BAKER
CASING SHOE CO.
Box 264 - a Huntington Park Sta. LOS ANGELES, CALIF., and Box 239 - a, COALINGA, CALIF.
MANUFACTURERS AND DEALERS
Oil Well Specialties for Advanced Methods Practical and Dependable

BAKER
Anchor Wall Packers
Baker Casing Shoes
Bridge Builders
Cement Retainers
Cement Plugs
Clean-Out Bailers
Dump Bailers
Die Nipples | Water
Die Collars | Tight
Gas Traps
Hinged Spiders
Heaving Plugs
Pitman Ends
Plain Casing Shoes
Regular Hook Wall Packers
Release Hook Wall Packers
Rotary Bits Baker Type
Rotary Hole Guides
Rotary Shoes
Rotary Tool Joints
Rotary Wall Hooks
Split Shoe Guides

All Supply Houses or Direct

GURLEY

The Oil Man's Standard in
ENGINEERING INSTRUMENTS
Since 1845
W. & L. E. GURLEY TROY, N.Y.

FREDERICK G. CLAPP
PETROLEUM ENGINEER
30 Church Street, New York City

W. L. GOMORY
Consulting Petroleum Technologist
Investigations, Reports, Estimates on Refineries, Special Processes, Management, Operation
Technical Advice in Patent Matters
REFINERY DESIGN
1927 Peoples Gas Bldg., Chicago, Ill.

HARRY F. WRIGHT
GEOLOGIST
Geological Examinations
Valuations for Tax and Financing
206 So. Cheyenne TULSA

E. W. SHAW
GEOLOGIST
302 Cosden Bldg., Tulsa, Okla.
170 Broadway, New York

JAMES O. LEWIS
PETROLEUM ENGINEER AND GEOLOGIST
724 Kennedy Bldg. Tulsa, Okla.

ROBERT W. CLARK
CONSULTING GEOLOGIST
AND APPRAISER
Depletions and Reserves for Income Tax
217 Commerce Bldg.
OKMULGEE, OKLA.

DEWITT T. RING
PETROLEUM GEOLOGIST
EL DORADO, ARKANSAS

F. B. Porter, B.S., Ch. E., President
R. H. Fash, B. S., Vice President
THE FORT WORTH LABORATORIES
Field gas testing. Analyses of oil field brines, gas, minerals and oil
923½ Monroe St., Fort Worth, Texas

J. C. STULL
GEOLOGIST
Explorations, surveys, appraisals.
Diamond core drilling, for structure or wildcatting
130 Chapel St., Hot Springs, Ark.
Farmers State Bank, Granite, Okla.
Brady Hotel, Tulsa, Okla.

The Consolidated Petroleum Engineers
Geological Examinations, Appraisals, Surveying, Mapping, Management
Southwest Texas and Mexico
Jarvis Plaza LAREDO, TEX.

Quimby Screw Pumps
For oil, hot, cold, thin or thick at high or low pressure 2 to 4,000 G. P. M. High efficiency. Great durability. Valveless, pulseless, noiseless. High speed for motor or turbine. Built since 1894.
WILLIAM E. QUIMBY, Inc.
Newark, N. J.

should take trouble to safeguard a concession obtained in face of so much international opposition for the benefit of a group under alien control and management. The Mosul concession might as well be written off the slate, the Royal Dutch and Shell would be powerless to enforce it. Hitherto the Burmah Oil Co. has kept out of international disputes. It is supreme in India and the largest holder except the Government in Anglo-Persian."

TAKES OIL FROM BILGE WATER

A device whereby oil impurities may be removed from bilge water and a substantial portion of the pollution of coastal waters eradicated was demonstrated before a body of health officers and chemical engineers by the Standard Oil Co. of New Jersey aboard its tanker, Charles Pratt, in New York Bay. The results of the demonstration will be presented before the International Conference of Maritime Nations on the question of pollution of coastal waters. Former Congressman T. Frank Appelby, sponsor of the bill providing for the calling of the conference passed by the last Congress, was present. W. H. Mencke, engineer for the Standard Oil Co. and inventor of the device, explained its working and said it would be installed on many Standard Oil tankers soon. He explained that by adding one part of the fuel oil to nine parts of bilge water, thus producing a heavier oil mixture than normal, the device would separate the oil from the water and prevent its being pumped into the sea.

COMPLETES PIPE LINE

LITTLE ROCK, Ark., Dec. 3.—The Atlantic Oil Production Co. has completed a pipe line from the Stephens Field in Arkansas to McNeil, Ark., a distance of 25 miles, where connection is made with the company's line from the Haynesville Field. It has a capacity of 10,000 bbls. a day. The Atlantic is the principal buyer in the Stephens Field and its oil is shipped to the Gulf for transportation to Philadelphia.

The Louisiana Refining Corp. has purchased from Hude & Arnes 11 miles of gathering lines in the Stephens Field, steel storage with a capacity of 5,000 bbls. and a loading rack on the Cotton Belt railroad at Verda.

It is reported that the St. Louis & Southwestern Railway Co. is to erect several large steel oil storage tanks on a tract of 100 acres it recently purchased near Herbert, Ark. Judge J. T. Gauhan of Camden, attorney for the company, says that probably $200,000 will be spent for tanks.

SCHOOL LAND SALE

OKLAHOMA CITY, Okla., Dec. 3.—Eleven tracts of State school land, situated in Lincoln, Logan, Oklahoma, Pottawatomie and Pawnee Counties, are to be offered for oil and gas lease by the commissioners of the land office on December 11. The Lincoln County tracts are in Section 36-13n-6e, the Logan County tract the northwest quarter of 11n-1e, Pottawatomie County, all four quarters of Section 16-7n-2e, and Pawnee County, the northwest quarter of Section 16-22n-5e. All bids submitted to the commissioners under a recent call were rejected because of the bids being too low. The tracts offered are in Pawnee and Lincoln Counties.

TAXES INCREASED

STILLWATER, Okla., Dec. 3.—Payne County has gained about $100,000 in taxes for the year by the decision of the State Board of Equalization to increase assessments of The Texas Co. and the Carter Oil Co. from $11,600,518 to $16,092,000.

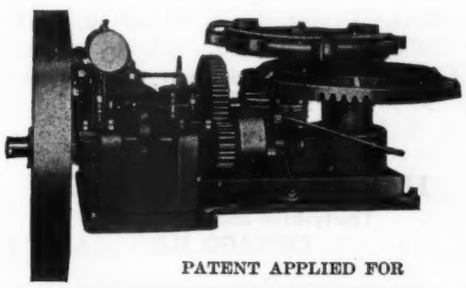
NYE
Toledo Type
Die Stocks
THREADING SIZE
1-INCH TO 2-INCH

No. 1

No. 1A Ratchet

The rugged construction and few working parts account for the simplicity and durability of these Nye Toledo Type Models. Ask for them from your jobber on 30 days' trial. Manufactured and guaranteed by

The Nye Tool & Machine Works
108-128 North Jefferson St.
Chicago, U. S. A.


PATENT APPLIED FOR

"THE SPENCE"

A combined gas engine and single eccentric pumping power, with a 10½-H. P. gas engine, positive governor, gravity feed lubrication and Wico ignition for gas or gasoline equipment. This power has been pronounced by some of our largest producers as one of the best pumping units on the market for wells in territory of medium depth.

Manufactured and Sold by
H. M. SPENCE, Parkersburg, W. Va.

PIONEER TANK & BOILER COMPANY
TULSA BOILER & SHEET IRON WORKS

A NEW NAME FOR AN OLD FRIEND

WHAT'S in a name, ayway? The refinery construction work we are doing under the name "Pioneer" is just the same high-grade as when it bore the name "Tulsa Boiler and Sheet Iron." For 18 years, as the "Tulsa Boiler and Sheet Iron Works" we have turned out tanks and refinery steel construction that made good friends for us among the wise buyers of the mid-continent. We pioneered in giving these people "close to home" service on the best kind of work. Now, under our new name, The Pioneer Tank and Boiler Company, we're all set with the men, machinery and money to keep on growing under the Pioneer banner like we did when Tulsa Boiler and Sheet Iron was on our letterhead. There is no change in our organization. Get Pioneer quotations on tank and refinery construction work.

PIONEER TANK & BOILER CO.
(Formerly Tulsa Boiler & Sheet Iron Works)
Box 1926, TULSA, OKLA.

STEEL CARNEGIE

All-Steel
DERRICKS
and Drilling Equipment

Carnegie Steel Company builds for **specified service**—equipment suitable for your special requirements. Send for our finely illustrated, 86-page booklet, "Steel Derricks."

Carnegie Steel Company
GENERAL OFFICES: PITTSBURGH, PA.
1597

Water Tube Boilers

IMMEDIATE DELIVERY

48-250 Horse Power, New, Standard Cross Drum Water Tube Boilers, built for 200 lbs. working pressure. Complete with steel casing, steam fittings and grates. Ready for immediate delivery from Chicago, Dumont, N. J., and Orange, Tex.

HARRIS BROS. COMPANY
Thirty-fifth and Iron Streets
CHICAGO, ILL.

METERS

For Measuring Production and Distribution of
Oil—Gasoline—Gas
and Other Fluids

PITTSBURGH METER COMPANY
General Office and Works: EAST PITTSBURGH, PA.

SALES OFFICES:
New York—50 Church St.
Chicago—5 South Wabash Ave.
Kansas City—Mutual Bldg.
Columbia, S. C.—1433 Main St.
Seattle—4038 Arcade Bldg.
Los Angeles Union Bank Bldg.

Bramo
Working Barrels, Balls and Seats
and
Bradford
Bradford Seamless Working Barrels
Sold by all dealers.
Bradford Motor Works
Bradford, Pa.
Branch Factory and Warehouse - Tulsa, Okla.
Mfrs of oil well supplies, working barrels, valves, balls and seats etc.

Production at Baku Gains 18.5 Per Cent During Fiscal Year

The condition of the oil industry in Russia is suggested by the following abstract by the eastern European division of the Department of Commerce from Economic Life, Moscow. The bureau assumes no responsibility for the accuracy of the information:

Operations and production of petroleum products by the "Azneft" (Azerbaijan Oil Administration) during the fiscal year 1922-23 (October 1 to September 30) are represented as follows, according to a statement issued by the managing director of the Azneft, based upon preliminary data:

The gross yield of petroleum in the Baku fields, exclusive of oil obtained by small private rigs and recovered from ditches, amounted to 213,000,000 poods (8.4 poods equal 1 bbl.), which represents an increase of 33,200,000 poods, or 18.5 per cent, as compared with the output of 1921-22, and 85 per cent of the program of production for the period. The output of the refineries amounted to 127,203,000 poods of oil (fuel oil, etc.) and 35,083,000 poods of refined products (gasoline, kerosene, etc.). Shipments of petroleum products from the Baku works totaled 155,984,000 poods, of which 143,193,000 poods were shipped by sea and 12,791,000 poods by rail.

Operations Increased

The number of wells in operation increased during the fiscal year from 1,289 in October, 1922, to 1,684 in August, 1923. The footage drilled in 1922-23 also showed a large increase—163,639 feet against 49,483 feet in 1921-22 and 11,256 feet in 1920-21. Of the total bored out, 105,700 feet were done by impact drills and 57,939 feet by rotary drills.

A complete system of narrow-gauge and standard rail lines was laid during the fiscal year 1922-23 within the territory of the Baku oil fields and a number of auxiliary mechanical plants were rehabitated. Construction of a central storehouse for technical supplies connected by railroad with separate fields is being completed. A new pipe line is being laid from Bibi-Aibat to the "Black City," which will result in considerably lowering the cost of delivery of crude oil to the distilling and refining plants now being shipped by sea. Extensive construction of dwellings has been carried out, which will considerably alleviate the existing housing crisis; workmen's settlements have been started. The previously impassable marshy section, known as the Ilyich (after the middle name of Lenin), on the Bibi-Aibat Bay, has been drained and traversed by macadam roads and narrow-gauge rail lines. Twenty-six wells are now being drilled in this sector, 30 more rigs are under construction, and 1 well already brought in.

Production of the Baku fields anticipated for the 1923-24 fiscal year is estimated in the program at 285,000,000 poods of petroleum, besides about 15,000,000 poods from makeshift rigs, and the drilling for the same period is set at 290,000 feet.

Production of Grozny Fields

The output of oil in the Grozny fields during the fiscal year of 1922-23 (October 1 to September 30) amounted to 91,685,000 poods, including 39,179,000 poods of gusher oil. Drillings during the same period amounted to 54,950 feet. The distilleries and refineries have worked up 74,067,000 poods of petroleum products. Shipments of oil from Grozny and Petrovsk during the year amounted to 75,697,000 poods.

NEW OIL ENGINE

The Bethlehem Shipbuilding Co. has developed a new oil engine with indicated horsepower of 4,000, brake horse power 2,900 and fuel consumption .425 pound per B. H. P. per hour.

DEAN E. WINCHESTER
GEOLOGIST
Petroleum and Oil Shale Examinations
607 E. & C. Bldg. DENVER, COLO.

L. G. Huntley Stirling Huntley
HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Frick Building PITTSBURGH, PA.

O. W. WELLS & CO.
Oil and Mining Properties. United States, Mexico, Central and South America. Specialists in Venezuelan oil properties. Expert advice rendered.
90 West Street, New York City
Cable address, "OILWELLS"

WESTERMAN BROS.
Manufacturers of
Oil and Gas Well Supplies
Write for New Catalogue
BREMEN, OHIO

THE JAS. I. TUCKER CO.
CONSULTING AND APPRAISAL ENGINEERS
Valuation of Oil and Gas Properties for Income Tax and Commercial Purposes
Tradesmens Bank Building
OKLAHOMA CITY, OKLA.

WYOMING MAP & BLUE PRINT CO.
GEOLOGISTS — OIL EXPERTS
Oil Field Maps, Blue Prints, Explorations, Reports
Box 325, CASPER, WYO.

BERNARD H. LASKY
PETROLEUM ENGINEER AND GEOLOGIST
Appraisals and Valuations for Financial Purposes
Geological Reports
Special Economic Investigations
208 Tuloma Bldg. TULSA, OKLA.

J. R. VILLARS
GEOLOGIST AND ENGINEER
17 Dunn Block
GREAT FALLS, MONT.

WRITE FOR OUR FREE BOOK ON
PATENTS
MUNN & CO.
631 Woolworth Building NEW YORK
Scientific American Building - WASHINGTON, D. C.
Tower Building - - - - - CHICAGO, ILL.
Hobart Building - - - - SAN FRANCISCO, CAL.

H. H. HOOD
PETROLEUM ENGINEER AND GEOLOGIST
Explorations, Surveys, Appraisers, Audits, Consultations, Management
1310 Chemical Bldg. St. Louis, Mo.

A. WILLCOCKS
CONULTING ENGINEER
Oil, Gas Gasoline plants design, construction, operation, consultations, valuations, reports, investigations, new processes.
Box 1455, Tulsa, Okla.

V. H. HUGHES
PETROLEUM AND MINING GEOLOGIST
406 Exchange National Bank Bldg
TULSA, OKLA.

W. G. MATTESON
CONSULTING GEOLOGIST
Specialist examinations and appraisals Mid-Continent and Gulf Coast Oil Properties
814 Texas State Bank, Fort Worth, Tex. Box 471, G. P. O., New York City

F. JULIUS FOHS
OIL GEOLOGIST
1320 Kirby Bldg., Dallas, Tex.
First National Bank Bldg., Tulsa, Okla.
and 60 Broadway, New York
Cables: Fohsoil, Bentley & McNeil Codes
No professional work undertaken.

William H. Foster W. A. Reiter
FOSTER & REITER
CONSULTING GEOLOGISTS
19th Floor, Magnolia Bldg., Dallas
Atlas Life Bldg., Tulsa

WALTER STALDER
OIL GEOLOGIST
Crocker Bldg.
SAN FRANCISCO, CALIF.

FRANK C. GREENE
GEOLOGIST
Announces removal of office to 518 Exchange National Bank Bldg., Tulsa, Okla.
Office Phone Osage 7682
Residence Phone Osage 2876

V. H. McNUTT
CONSULTING GEOLOGIST AND APPRAISER
Specializing in Northern Oklahoma and Southern Kansas Fields
Rooms 404-405 Commercial Bldg.
TULSA, OKLA.

LUCIEN BECKNER
CONSULTING GEOLOGIST
Twenty-odd years' experience in Kentucky and the Southern States
39 South Main St. Phones 1131 and 33
WINCHESTER, KY.

C. W. WASHBURNE
GEOLOGIST
2 Rector Street New York

E. J. LONGYEAR CO.
MINING ENGINEERS AND GEOLOGISTS
Diamond Core Drill Manufacturers
Diamond Drilling Contractors
MINNEAPOLIS MINN.

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

GEORGE A. BURRELL
PETROLEUM NATURAL GAS GASOLINE
501 Columbia Bank Bldg.
PITTSBURGH, PA.

CASPER ASKS OFFICES AS CENTER OF FIELD

CASPER, Wyo., Dec. 3.—Denver is making strenuous efforts to have the Producers & Refiners offices in Chicago moved to that city instead of Casper, though no definite statement has come from either the Prairie or the Producers & Refiners. It is considered probable the Chicago offices will be eliminated by the change to the Prairie and the work formerly carried on at Chicago done at either Casper or Denver. At Casper, the Producers & Refiners now has one of the finest office buildings, capable of housing all the offices of both the Kasoming and Producers & Refiners in this territory. Casper is the logical point for headquarters for this region because it has been shown by the Midwest Refining Co. and other oil firms, field work cannot be handled satisfactorily from Denver. The Midwest has moved a large part of its office force from Denver to Casper and appears making an effort to do away with the Denver offices in order to cut down the heavy overhead of leased wires and travel expenses.

The Carter Oil Co. has eliminated its Denver office and moved its headquarters to Casper, as has the Gypsy, E. T. Williams and many other firms. The Ohio Oil Co. and the Illinois Pipe Line Co. make Casper their headquarters and when The Oil and Gas Journal established a branch office in the Rocky Mountain region, the choice fell to Casper because of that city's nearness to the actual field operations and sources of news.

PETROLEUM ENGINEER TEST

The United States Civil Service Commission announces an open competitive examination for assistant petroleum engineer. Receipt of applications will close December 26. The examination is to fill a vacancy in the Bureau of Mines, Department of the Interior, for duty at Bartlesville, Okla., at an entrance salary of $3,000 a year, and vacancies in positions requiring similar qualifications. The duties consist of investigative work in Kansas oil fields with special reference to the application of different oil well cementing operations for the exclusion of water from the wells. Competitors will be rated on education, training and experience, and publications, reports or thesis to be filed with the application. Application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of United States civil service examiners at the past office or custom house in any city.

ALLOWANCE FOR OUTAGE

OKLAHOMA CITY, Okla., Dec. 3.—An agreement effective December 1 has been made between State Auditor C. C. Childers and officials of the Oklahoma Oil Jobbers' Association that a flat 1 per cent reduction will be made from the amount of gasoline and kerosene shown by stencil to be in loaded tank cars to cover loss by evaporation before the cars are checked by inspectors of the oil and gas division of the Corporation Commission. This will be the basis on which taxes are to be computed under the law calling for 1 cent per gallon for road taxes. Inspectors' reports to the Commission will be in accordance with the stenciled figures. This reduction covers what jobbers call outage and it ends numerous misunderstandings as to what percentage should be deducted.

MODIFIES WYOMING LEASES

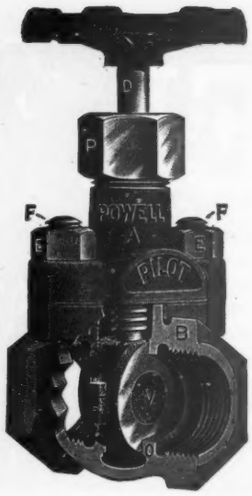
The Union Pacific Railroad, a large land holder in the fields of southern Wyoming, has modified its leases by reducing the royalty from one-sixth to one-eighth, with consolidation privileges. The modification is of importance to the Producers & Refiners, Ohio Oil Co. and other companies operating in the Baxter Basin Field and in other districts in that part of the State.

STEEL
for Immediate Shipment from Stock
Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete Reinforcing, Rails, Pipe, Turnbuckles, Small Tools, etc.
Write for Ryerson Journal and Stock List
JOSEPH T. RYERSON & SON INC.
CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK

Ross-Meehan Foundries
MANUFACTURERS
STEEL, MALLEABLE IRON and GRAY IRON CASTINGS
FOR
OIL PRODUCERS AND REFINERS
"MEEHANITE METAL"
River Clamps a Specialty
CHATTANOOGA, TENNESSEE, U. S. A.

PERFORMANCE—That's What Counts in Selling Drilling and Fishing Tools
The Acme organization can point with pride to a record of over 20 years of satisfactory and dependable performance of their tools and service in every field.
The most up-to-date, complete line of Fishing and Drilling Tools obtainable anywhere.
Acme Fishing Tool Company Parkersburg W. Va.
Established 1900
Field Stores in: TULSA, OKLA. PAWHUSKA, OKLA. OKMULGEE, OKLA.
Also distributed by: Acme Rental Tool Service, Graham, Texas
Tim Cushing Tool and Supply Company, Bristow, Okla.
Elms Bros. and Co., Waynesburg, Pa.
Frick-Reid Supply Co., Western Supply Co., and other leading jobbers

50 MEN
To Learn Oil Geology and Engineering
New Class Now Organizing
Under the personal direction of a University Professor and Geologist of wide reputation. Graduates holding good positions with oil companies and doing work as independent geologists. A great opportunity to get into a profession of unlimited possibilities, where you can earn
$25 to $75 a Day
Day and night sessions. Personal and correspondence instruction. Actual field work and prospecting. Write today for Oil Bulletin and full information.
Department of Geology, Ransomerian School
1222-32 Oak St., Kansas City, Mo.



POWELL

"Pilot" Gate Valves

All iron or iron body with steam bronze trimmings. Simple in construction.

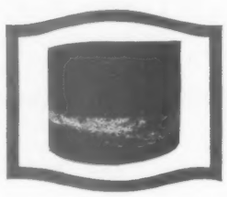
Economical and Reliable

Avoid disappointment in Valve Service by specifying POWELL VALVES

The Wm. Powell Company
Cincinnati, Ohio

Porosity of Sands

A section of the core from a Longyear Mid-Continent test hole illustrates clearly the thin shale parting in the oil sand. This test showed distinct horizons of saturated sand and barren shale partings, while previous churn drilling indicated continuous oil sand.



For further information write

E. J. Longyear Company
Minneapolis, Minnesota, U.S.A.

GOULDS

FOR ALL PIPE LINE AND REFINERY SERVICES

BULLETINS ON REQUEST
THE GOULDS MANUFACTURING COMPANY
Seneca Falls, N. Y.
Branches or Agencies in All Principal Cities

PUMPS

The most SIMPLE, RAPID, THOROUGH, ECONOMICAL method for treating cut oil, and tank bottoms.

Tret-O-lite

Reg. U. S. Pat Off.

Ask for our new book giving all the facts

WM. S. BARNICKEL & CO.
ST LOUIS, MO.

TOUCH IMPORTANT IN POLE TOOL FISHING

(Continued from Page 36)

making a connection and unscrewing, the die socket was withdrawn, but it brought only one left-handed fishing pole with it to the surface, leaving the second fishing pole in the borehole. The die socket was again let in, but no connection could be effected, therefore it was withdrawn.

Impression Block Shows

On an impression block being run in, it was found that instead of showing, as was expected, the pin of othe second fishing pole standing vertically, the impression showed the fishing pole lying over to one side. An ordinary tongue socket was then let in which resulted in a piece of fishing pole some 6 feet long being withdrawn from the borehole. The next impression obtained showed the substitute's pin and the substitute was then unscrewed from the socket and pulled out. Further impressions showed the pin of the lost fishing socket, but no trace of the broken fishing pole. As the body of this socket was only ¼ inch smaller than the inside diameter of the casing, it was difficult to know where the six meters of fishing pole had got to, but by running a deeper impression block which would pass down at least to the shoulder of the socket, it was ascertained that a quantity of sand had collected on the top of it. A small indentation on one side of the impression block immediately gave the clue as to what had happened. The missing part of the fishing pole had been driven completely through the wall of the casing, and only the bent and broken end was protruding about ¾ inch inside.

After using various hooks and spuds, the broken off pole was pulled out about 1 foot 8 inches into the casing, but owing to the angle at which it was protruding, it was impossible to get hold of it. The pole was then driven back until the broken end became practically flush with the wall of the casing. A connection was made by screwing directly on to the fishing socket and upward jarring was commenced, which proved to be a very false step. After some 14 days' continued upward jarring, the pin was broken off the socket, and no further headway could be made. It was then decided to try to drive the socket downwards, but instead of first making a connection on to it and driving from above by means of a pair of fishing jars, a driving bar was made, having an outside diameter practically equal to that of the inside diameter of the casing; this was lowered in and driving down was commenced. The depth at which the driving bar stood was not measured.

Bent Into a Hook

After several days of heavy driving, which only resulted in the tools being driven some 2 feet 6 inches, the driving bar was withdrawn. An impression block was run in which showed an impression of the fishing pole bent in the shape of a hook and lying right across the borehole and over the top of the socket stem. What had happened was that, instead of driving on the top of the socket as was intended, the driving bar, owing to its fullness, had come to rest during lowering in on the broken fishing pole which was protruding slightly inside the casing, and on this they had been driving until it had become bent over in the manner described.

Under these circumstances, it was quite impossible to effect a connection with the fishing socket, and there was only one thing that could be done: to make a circular cutter to cut off the bent pole flush with the casing, and after having accomplished this, the severed portion could easily have been recovered, enabling a connection with the socket to be made again. Instead of this, a hook was constructed by which it was anticipated it would be impossible either to withdraw the broken pole altogether or to straighten it out. The hook was duly lowered in, and after several hours of upward

JOHN L. RICH
PETROLEUM GEOLOGIST
Box 3, Ottawa, Kansas

J. ELMER THOMAS
CONSULTING GEOLOGIST
751 First National Bank Bldg.
CHICAGO, ILL.

GLEN M. RUBY
GEOLOGIST
Specializes in examinations and appraisals of oil lands within the Rocky Mountain States
329 U. S. National Bank Bldg.
DENVER, COLO.

ROSWELL H. JOHNSON
GEOLOGIST AND APPRAISER
Oil and Gas Bldg.
University of Pittsburgh
PITTSBURGH, PA.

Robert H. Wood Virgil O. Wood
WOOD & WOOD
PETROLEUM GEOLOGISTS AND APPRAISERS
Phone Cedar 1725—816 Daniel Bldg.
TULSA, OKLA.

CARL B. ANDERSON
GEOLOGIST AND PETROLEUM ENGINEER
804 Kennedy Bldg.
TULSA, OKLA.

Charles T. Kirk James E. Hoover
KIRK & HOOVER
Geology, Valuation, Investments
American and Foreign
Osage 2820, 9504—432 Mayo Bldg.
TULSA, OKLA.

SAMUEL J. CAUDILL
Geologist and Petroleum Engineer
Valuation—Depletion
For Financial or Income Tax Purposes
1016 Atlas Life Bldg., Tulsa, Okla.

Wilbur E. Brown G. Thomsen, Jr.
BROWN & THOMSEN
GEOLOGISTS
218½ West Grand Ave.
OKLAHOMA CITY, OKLA.

H. H. MESSIMER
TANK GAUGING ENGINEER
Prompt, Efficient Tank Table Service
Prices Reasonable
P. O. Box 257 105 Midco Bldg.
Phone Osage 3142
Tulsa, Okla.

PREWITT & HAUSER
ENGINEERS
Valuations of Oil Properties
For Financing and Income Taxes
219 Iowa Bldg.
Tulsa, Oklahoma

BROKAW, DIXON, GARNER & McKEE
GEOLOGISTS
PETROLEUM ENGINEERS
Examinations, Appraisals
Estimates of Oil Reserves
120 Broadway New York

Emil A. Anderson Frank B. Anderson
ANDERSON & ANDERSON
Mining Engineers and Petroleum Geologists
304 Bitting Building
Wichita, Kans.
Telephone Market 2887

ROBERT W. HUNT CO.
Inspecting and Testing Engineers
Inspection of Oil Line Pipe, Oil Well Casing, Tanks, Drums and Barrels
Inspection During Manufacture
Resident Inspectors at Pipe and Steel Mills
2200 Insurance Exchg., Chicago

RALPH M. WEAVER, Jr.
PETROLEUM GEOLOGIST
Wynnewood, Okla.

IRVINE E. STEWART
GEOLOGIST
421 Ford Building
GREAT FALLS, MONTANA

VERGIL NEAL BROWN
Consulting Geologist and Engineer
Geological Surveys and Appraisals
721 New Wright Building
Tulsa, Okla.

Hector Crandall B. F. Murta
CRANDALL & MURTA
PETROLEUM GEOLOGISTS
Phone Cedar 874
345 Kennedy Bldg. TULSA, OKLA.

GEO. C. MATSON
PETROLEUM GEOLOGIST AND ENGINEER
Geological Surveys, Appraisals for Taxation or Financing
Osage 2049—Phones—Osage 1333
603 Cosden Bldg. TULSA, OKLA.

Frank A. Herald John M. Herald
HERALD BROTHERS
GEOLOGISTS
PETROLEUM ENGINEERS
303 Cosden Building Phone Cedar 5332
TULSA, OKLAHOMA

ALBERT HILL FAY
CONSULTING MINING ENGINEER
COAL MINE and OIL WELL valuations in connection with Federal Income Taxes; depletion problems; reports for investors
Telephone Main 2223
907 Fifteenth St. N. W.
Washington, D. C.

G. JEFFREYS
CONSULTING GEOLOGIST
907-908 Russell Building
San Antonio, Texas

jarring it broke, and about 2 feet of this hook was left behind.

This, however, did not prove a sufficient lesson, so a second hook was let in, which took hold of what was thought to be the bent fishing pole. After several days of upward jarring, during which time about 33 feet of progress was recorded, the hook was uncoupled and withdrawn, and after running an impression block it was discovered that instead of a hold having been taken on the broken pole, the hook had penetrated the casing at that point where the pole had gone through, and the 33 feet of upward jarring had only resulted in slitting the casing to that extent.

Error of Judgment

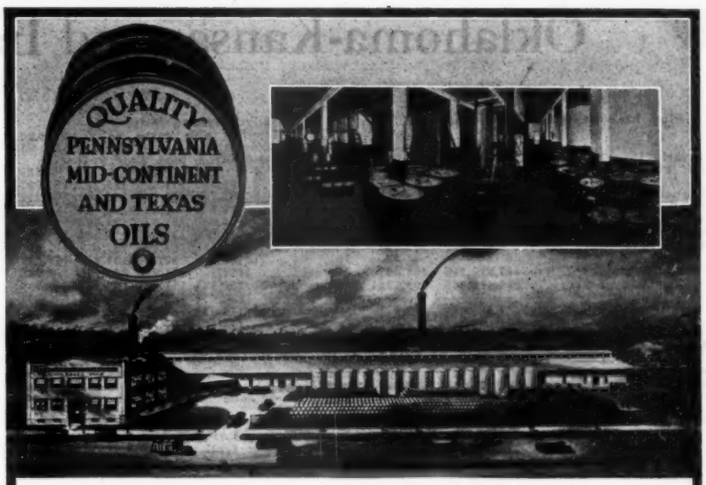
It was now that a further serious error of judgment was made, for instead of cutting away the pole and freeing the socket, it was decided to pull the casing, poles and tools together, the result being that the casing parted at a joint which had been slit. An impression block was run in, became trapped, and could not be removed. During this process a half pair of fishing jars was also left behind. The decision was then come to that there was nothing more to be done, and the best course would be to drill alongside, or, in other words, to sidetrack some 136 feet of 6-inch diameter casing containing a bit, sinker and jars, two drilling poles, a fishing socket, two feet of hook and impression block, and a half pair of jars, as well as the cause of the trouble—the broken fishing pole. The work of drilling past took over 17 months to perform.

By this instance it will be seen how very easy it is for a simple fishing job to be converted into a serious fishing complication through lack of spending a little more time and concentrated thought at the outset, and by taking risks through undue haste to get the well cleared. Had accurate measurements been taken in the first place, it would have been ascertained that the poles had broken in two places, and had run down alongside, thus becoming bent and wedged. Then, instead of pulling and jarring, the hole could soon have been cleared by the simple process of unscrewing whatever the socket took hold of. This would certainly have taken less time, and would have been the safest course to pursue. After the impression block had been run and the borehole measured, a hold could have been taken with a suitable socket, and a little upward jarring tried, which would have tended, not only to straighten the bent poles, but also to loosen their joints. Unscrewing could then have proceeded until all the drilling poles had been withdrawn and only the lost string of tools remained, which could have been caught hold of and pulled out without much trouble.

Classified Advertisements Pages 118-119

NEODESHA REFINERY STARTS

The Standard Oil Co. of Kansas has resumed operations at its refinery located at Neodesha, Kans., after a shutdown since September. The plant started running 7,000 barrels of crude daily on Monday.



PENNSYLVANIA PETROLEUM CO.
WHOLESALERS
North Kansas City, Mo.

OIL FIELD IGNITION
Guaranteed Service on
K-W, Bosch, Dixie, Apollo, Wico
Igniters and Turbine Generators
POWER ENGINEERING & IGNITION CO.
811 South Main St. TULSA, OKLA.

Gasoline Plants Topping Plants
Gas Compressing Stations Refineries
Designed and Installed Complete
FEDERAL ENGINEERING COMPANY
PITTSBURGH, PA.

Essex Lubricating Devices Are Oil Country Favorites!
Because they are made right and sold right. 22 years on the market.
Sold by jobbers everywhere.
Catalogue on request
Essex Brass Corporation
2000 Franklin Street
DETROIT, MICH.

A NON-MIRING WAGON
Capacity, 10 tons. Adapted for hauling over sand, mud, bad roads or soft ground. Loose fit of track band minimizes wear on pins. Trussed track rigidly flat on ground at all times. More freight with less power. Will carry capacity loads wherever animals or tractors can work. Shipments from Chicago factory direct to you at any point. Information and prices on request.
ATHEY TRUSS WHEEL CO., 130N. Wells St., Chicago, U. S. A.
Cable address: "Trusswheel, Chicago"
ATHEY TRUSS WHEEL WAGON

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for September

Runs

	Month	Daily Av.
*Prairie Pipe Line Co....	2,430,000	81,000
Gulf Pipe Line Co.....	1,509,583	50,319
The Texas Co.	458,524	15,284
Magnolia Pet. Co.	786,580	26,219
Empire Pipe Line Co.....	787,241	26,241
Cosden Pipe Line Co.....	589,709	19,990
Sinclair Pipe Line Co....	763,611	25,454
*Other lines	6,660,000	222,000
Total September	13,995,248	466,507
Total August	15,485,665	499,538
Difference	1,490,417	33,031

Shipments

†Prairie Pipe Line Co....	2,874,690	95,823
Gulf Pipe Line Co.....	1,196,569	39,886
†The Texas Co.	282,518	9,751
Magnolia Pet. Co.	688,632	22,954
Empire Pipe Line Co.....	837,947	27,932
Cosden Pipe Line Co.....	580,383	19,346
†Sinclair Pipe Line Co....	860,380	28,679
*Other lines	4,850,000	195,000
Total September	13,181,119	439,371
Total August	15,444,598	498,083
Difference	2,263,479	38,711

Stocks

*Prairie Oil & Gas Co.....	23,000,000
*Prairie Pipe Line Co.....	1,350,000
Gulf Pipe Line Co. and Gypsy Oil Co.	8,685,755
The Texas Co.	7,834,366
Magnolia Pet. Co.	7,588,752
Empire Pipe Line Co.	2,281,848
Cosden Pipe Line Co.	3,485,613
Sinclair Crude Oil Pur. Co.....	30,725,000
Carter Oil Co.	16,106,356
*Other lines	4,500,000
Total September	105,557,684
Total August	104,257,688
Difference	1,299,996

*Estimated. †Includes shipments of Texas crude oil.

Note—Stocks do not include approximately 7,000,000 bbls. of crude oil held on private tank farms and leases.

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1920	1921	1922	1923
January	56,004	64,460	67,702	75,790
February	68,699	70,054	75,095	71,093
March	67,745	68,555	78,531	76,592
April	64,589	65,036	75,462	75,614
May	63,937	65,466	77,592	77,365
June	68,750	62,438	76,193	77,592
July	66,489	59,486	76,435	71,879
August	63,861	64,888	79,387	76,910
September ...	68,102	60,110	78,512	72,358
October	65,066	57,688	77,209	76,256
November ...	62,758	58,470	75,313	.....
December ...	60,975	61,000	73,351	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1920	1921	1922	1923
January	98,835	115,550	119,792	171,067
February	107,146	96,736	111,362	164,219
March	110,777	84,168	127,753	185,487
April	114,090	101,015	127,068	179,751
May	110,219	100,253	127 840	177,102
June	102,598	105,037	137,638	173,598
July	112,340	97,096	137,872	168,330
August	122,296	101,653	153,275	142,766
September ...	127,131	117,440	158,761	137,266
October	122,891	105 728	165,345	134,597
November ...	117,730	121,803	165,677	.....
December	117,201	104,023	172,861	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1921	1922	1923
January	7,916,353	16,297,858	14,040,567
February ...	8,721,878	17,009 293	14,028,437
March	9,818,766	16,877,937	13,873,146
April	10,369,941	16,777,842	13,737,575
May	11,224,694	16,948,962	13 815,623
June	12,328,126	16,810,169	14,641,553
July	13,798,698	16,669,286	14,645,584
August	15,156,633	16,235 229	14,770,539
September ...	15,525,750	16,228,545	14,803,444
October	15,761,079	15.767,746	14,504,111
November ...	14,971,071	15.171,972	.....
December	15 854,741	14,323,765	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Receipts	Shipments	Stocks
1922—			
October	3,368.58	4,783.61	29,313.13
November	3,052.75	2,230.18	30,135.70
December	3,076.36	1,292.84	31,919.22
1923—			
January	2,798.55	2,461.36	32,256.41
February	2,692.93	932.33	34,017.01
March	2,978.88	12,417.00	24,578.89
April	3,529.12	3,054.09	25,053.92
May	3,538.73	4,856.42	23,736.23
June	2,927.71	4,743.78	21,920.16
July	2,996.64	1,471.57	23,445.23
August	3,199.07	3,769.34	22,874.96
September	2,829.79	5,822.38	19,882.37
October	2,694.23	5,251.81	17,324.79

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1.....	2,466,238.64
Runs from wells	544,861.93
Other receipts	119,965.33
Regular deliveries	228,961.55
Other deliveries	474,479.61

The amount of Illinois oil run by the Tide Water Pipe Line Co. on October was 32,005.16 barrels, and deliveries were 118,-851.27 barrels. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

	Runs	Deliveries
1922—		
October	618,459.82	454,005.38
November	566,508.03	434,681.97
December	552,069.33	391,868.37
1923—		
January	599,239.86	470,958.84
February	496 421.79	382,566.83
March	625,006.81	472,920.76
April	521,910.87	423,548.43
May	624,107.98	523,515.00
June	582,511.82	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,152.82
September	542,561.59	305,925.40
October	576 867.09	347,812.82

The Tide Water Pipe Co., Ltd., also delivered in October 192,614.57 barrels of Oklahoma oil. The total deliveries of all grades by the Tide Water were 477,869.02 barrels.

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	188,712.66	211,486.93
S. W. Pa. P. L....	82,300.00	93,352.02
Eureka P. L....	368,672.93	430,327.54
Buckeye P. L. (Macksburg) ..	250,485.71	280,073.58
Buckeye P. L. (Cleveland) ...	16,280.77	19,218.85
Buckeye P. L. (Lima, etc.) ..	139 388.04	144,889.47
Indiana P. L.	14,150.22	14,811.54
Cumberland P. L.	386,752.33	399,736.19
N. Y. Transit	15,261.47	17,402.53
Tide Water P. L..	149,139.68	163,016.59
Pure Oil P. L....	177,281.66	190,792.36
Emery P. L.	31,486.08	25,209.98
Paragon Ref.	.....	.....
Inidan Ref.	309,242.57	315,405.99
Paragon Dev.	32,320.51	31,501.81
Pittsburgh P. L..	8,272.29	10,612.83
Swiss P. L.	995.34	1,015.89
Riggs Ref.	.....	5,083.17
Total	2,170,742.30	2,363,937.27
Daily av.....	72,358.08	76,256.04

Note—Indian Refining Co. also reported other receipts of 92,674.20 bbls. Paragon Refining Co. had other receipts of 117,-513.75 bbls. Paragon Development Co. had other receipts of 5,932.65 bbls. Pittsburgh Pipe Line had other receipts of 2,587.79 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	412,333.27	497,929.96
S. W. Pa. P. L. ..	261,116.40	283,546.24
Eureka P. L.	130,178.48	126,716.26
Buckeye P. L. (Macksburg) ..	86,985.91	82,001.2
Buckeye P. L. (Cleveland) ...	1,056.36	1,190.0
Buckeye P. L. (Lima, etc.) ...	693,616.91	641,792.5
Indiana P. L. ...	924,686.09	871,660.5
Cumberland P. L.	160,116.97	210,110.5
Southern P. L. ...	.....	.....
Crescent P. L....	73,331.96	96,990.2
N. Y. Transit ...	359,939.97	487,333.0
Northern P. L....	69,794.27	32,064.0
Tide Water P. L.	180,612.43	166,461.2
Pure Oil P. L. ...	173,186.23	152,390.2
Emery P. L.	31,492.26	34,674.0
Paragon Ref.	114,947.24	145,286.0
Indian Ref.	294,144.15	291,961.2
Paragon Dev. ...	37,152.37	37,396.2
Pittsburgh P. L..	11,341.66	13,343.0
Swiss P. L.....	1,939.86	94.0
Riggs Ref.	.....	.....
Total	4,017,972.79	4,172,491.0
Daily average..	137,585.76	134,596.5

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept., '23	Oct., '23
Nat. Transit	1,197,343.90	1,197,3
S. W. Pa. P. L....	924,128.98	870,1
Eureka P. L.....	1,934,234.44	2,004,5
Buckeye P. L. (Macksburg) ..	492.970.70	500,7
Buckeye P. L. (Cleveland) ...	12,414.25	30,3
Buckeye P. L. (Lima, etc.) ...	4,214,807.68	4,305,6
Indiana P. L.....	681,376.15	664,4
Cumberland P. L.	732,274.03	697,1
Southern P. L. ...	959,768.25	1,037,4
Crescent P. L....	78,603.29	69,1
N. Y. Transit.....	1,730,879.71	1,467,3
Northern P. L. ..	930,869.95	864,6
Tide Water P. L.	.....	.....
Pure Oil P. L....	293,002.25	323,8
Emery P. L.....	5,811.39	6,2
Paragon Ref.	180,341.45	156,4
Indian Ref.	400,841.76	516,2
Paragon Dev. ...	11,121.59	10,4
Pittsburgh P. L..	9,171.35	9,2
Swiss P. L. Co. ..	4,482.75	2,9
Riggs Ref.	.....	1,4
Total	14,803,443.87	14,504,1
Increase	32,905.27	
Decrease		299,3

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October, showing the gross stocks of the above fields:

	Sept., '23	Oct., '23
Pennsylvania	3,601,488.55	3,791,8
Lima	888,203.63	937,7
Kentucky	1,998,875.17	1,964,6
Mid-Continent ...	7,951,689.79	7,344,2
Illinois	363,186.73	565,5
Total	14,803,443.87	14,504,1

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

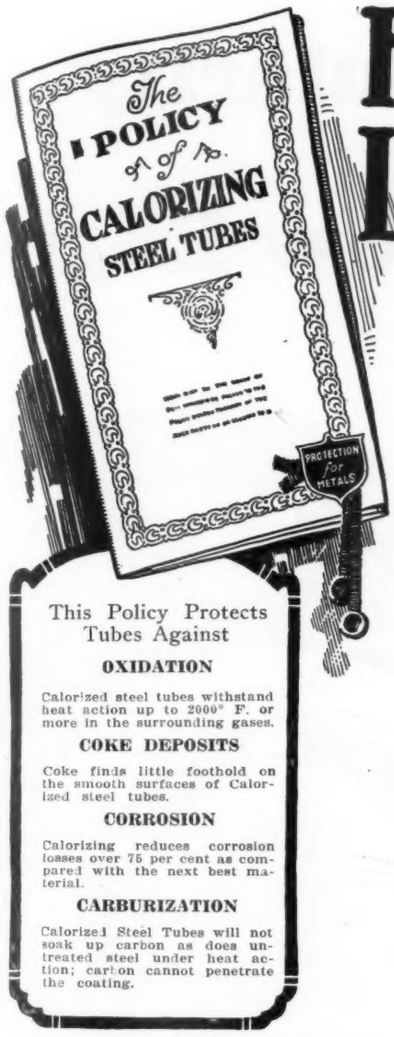
Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	
July	110,750	18,750	517,000	185,250	121,750	952,500	.....	139,750	.....	.....	139,750	1,092,2
August	116,067	51,709	688,485	222,873	151,970	1,231,104	.....	24,612	219,030	.....	243,642	1,474,7
September	205 600	47,400	516,200	124,200	126,600	1,000,000	.....	140,600	.....	.....	140,600	1,140,6
October	195,000	56,000	626,000	220,000	107,000	1,178,000	.....	208,000	.....	.....	208,000	1,386,0

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS						GULF COAST PORTS					Total All Ports
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	
May	114,665	128,750	256,500	109,250	153,750	662,915	335,250	227,500	298,500	63,500	924,750	1,587,6
June	62,800	84,200	358,200	153 400	161,800	757,600	301,000	228,400	212,400	45,800	787 600	1,545,2
July	71,750	116,250	451,500	112,000	218,750	970,250	367,750	280,000	208,250	23,000	879,000	1,849,2
August	116,065	89,113	374,613	102,970	197,127	879,888	338,485	266,224	234,388	45,633	1,295 730	2,175,6
September	53,600	113.000	353,200	132,000	149,600	801,400	355,200	279,400	176,000	44,800	714,200	1,515,6
October	91,250	48,000	298,500	134,000	204,000	800,750	247,000	352,500	96,000	125,000	707,000	1,507,7

PRODUCTION BY MONTHS AND DAILY AVERAGE PRODUCTION IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming Montana	Other Fields	Totals
1922—										
October:	Month	13,419,432	13,222,151	9,106,994	2,638,875	780,797	2,783,994	2,856,805	3,550,182	48,358,2
	Daily average	432,885	426,521	293,774	85,125	25,187	89,774	92,155	114,522	1,559,9
November:	Month	14,035,537	12,613,560	8,676,000	2,646,091	1,023,450	2,529,150	2,208,800	3,205,290	47,037,2
	Daily average	467,818	420,452	289,200	88,261	34,115	84,305	96,960	106,483	1,567,3
December:	Month	15,426 810	13,185,416	8,707,931	2,649,900	1,596,500	2,463,291	3,108,866	3,149,445	50,288,2
	Daily average	497,639	425,336	280,901	82,330	51,500	79,461	100,286	101,595	1,622,3
1923—										
January:	Month	16,457,445	13,328,574	8,881,009	2,826,611	2,817,002	2,428,018	3,124,707	3,423,516	52,786,3
	Daily average	530,886	425,817	286,484	91,181	74,742	78,323	100,797	110,436	1,702,9
February:	Month	16,426,759	12,045,020	7,663,992	2,748,660	2,258,984	1,084,008	2,922,192	2,907,340	48,056,9
	Daily average	586,670	444,465	273,714	91,622	80,678	67,286	104,364	104,405	1,716,3
March:	Month	19,608,192	13,955,828	8,462,783	2,847,040	2,970,575	2,312,600	3,274,778	3,464,529	56,896,3
	Daily average	632,525	450,188	272,993	91,840	95,825	74,600	105,638	111,759	1,835,3
April:	Month	20,695,959	14,399,610	8,403,240	2,768,052	2,766,000	2,160,300	3,584,048	3,281,340	58,058,5
	Daily average	689,865	479,987	280,108	89,292	92,200	72,010	115,947	109,378	1,935,3
May:	Month	21,535 365	15,658,782	8,932,000	2,805,750	3,389,000	2,175,090	3,566.600	3,546,400	61,608,9
	Daily average	694,689	505,122	288,129	93,525	109,323	70,161	115,051	114,400	1,987,3
June:	Month	23,667,106	15,572,730	8,817,000	2,797,830	3,078,990	1,981,800	3,385,600	3,401,400	61,702,4
	Daily average	755,570	519,091	293,900	93,261	102,633	66,066	122,853	113,380	2,058,7
July:	Month	25,262,052	15,260,184	10,662,000	2,448,566	2,859,000	2,012,000	4,143,400	2,788,600	65,435,8
	Daily average	814,906	492,264	343,935	78,986	92,226	64,903	133,657	89,955	2,110,0
August:	Month	26,440,005	14,049,076	11,454,000	2,316,320	3,113,000	2,078,000	4,180,000	3,473,300	67,103,7
	Daily average	852,903	453,196	369,484	74,720	100,419	67,032	134,861	112,043	2,164,6
September:	Month	25,762,500	13,812,220	13,287,000	2,234,130	3,350,000	1,855,000	4,449,500	3,262,800	66,013,1
	Daily average	858,750	427,074	409,567	74,471	111,666	61,834	148,317	108,760	2,200,4
	Twelve months	237,737,192	166,113,151	112,053,944	31,727,825	29,503,298	25,862,186	31,505,296	39,454,142	683,947,4
	Total daily average	651,335	455,105	306.997	86,898	80,831	70,855	86,316	108,094	1,866,4


The
POLICY
of
CALORIZING
STEEL TUBES
PROTECTION for METALS
This Policy Protects Tubes Against
OXIDATION
Calorized steel tubes withstand heat action up to 2000° F. or more in the surrounding gases.
COKE DEPOSITS
Coke finds little foothold on the smooth surfaces of Calorized steel tubes.
CORROSION
Calorizing reduces corrosion losses over 75 per cent as compared with the next best material.
CARBURIZATION
Calorized Steel Tubes will not soak up carbon as does untreated steel under heat action; carbon cannot penetrate the coating.

Here is Tube Life Insurance!

Calorizing is tube life-insurance. It protects still tubes against the ravages of oxidation, corrosion, coking and carburization.

Calorizing coats steel tubes with an aluminum alloy armor both outside and inside. The aluminum is actually driven into the steel. As a result, the life of steel tubes so treated is greatly increased—runs are longer, tube cleanings become fewer, shorter and easier.. Gases or still vapors that quickly eat the life out of unprotected steel tubes lose much of their effect on Calorized tubes. Coke finds little foothold on their smooth, almost glossy inner surface. Carbon cannot soak into the metal to cause brittleness.

Here, then, in Calorizing, is tube life insurance, with all that it implies—increased production, decreased fuel consumption, fewer shutdowns, minimized tube replacements.

To increase the life of the tubes in your stills, have them Calorized. Write for detailed information and evidence. It is yours on request.

The Calorizing Company

Oliver Bldg., Pittsburgh

Eastern Office—50 Church St., New York

DISTRICT OFFICES: 224 S. Michigan Ave., Chicago, Ill. | 2-220 General Motors Bldg. Detroit, Mich. | 424 West Bldg., Houston, Texas | 720 Commerce Bldg., Kansas City, Mo.

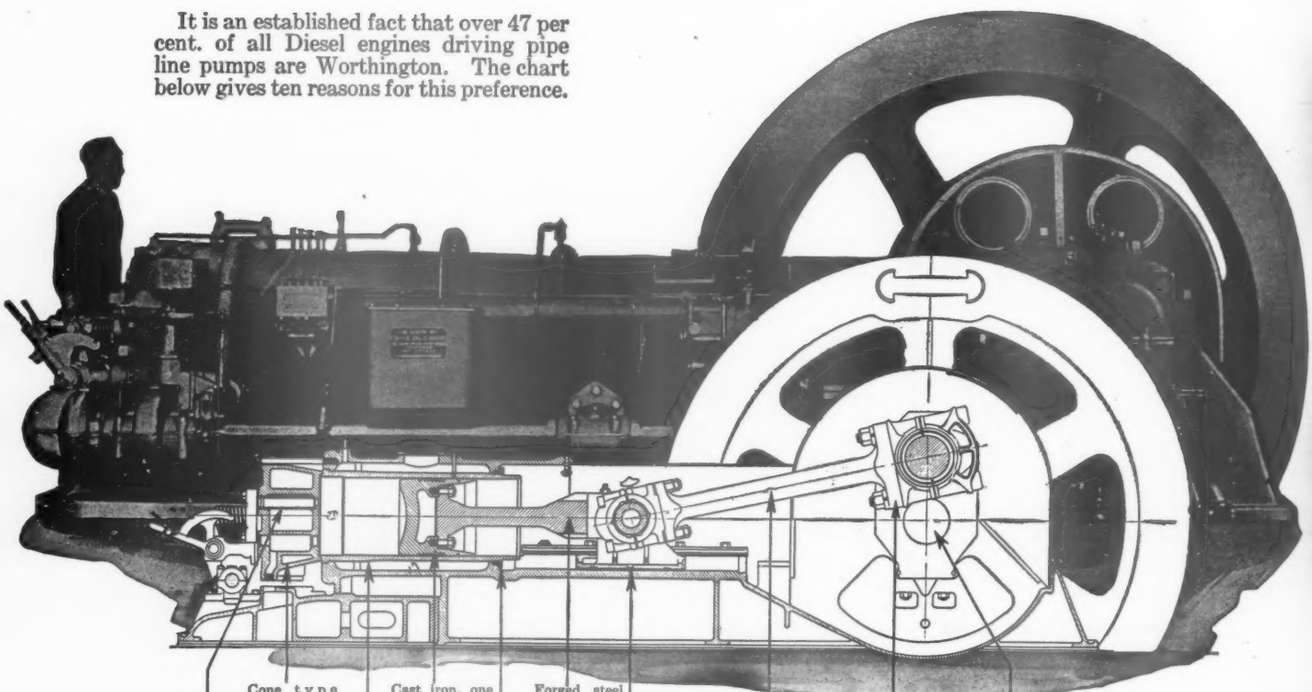
Economize!
Modernize!

Calorize

49

TEN REASONS FOR THE Oil Field Popularity of the Worthington Snow Engine

It is an established fact that over 47 per cent. of all Diesel engines driving pipe line pumps are Worthington. The chart below gives ten reasons for this preference.



Cone type cylinder head (Strongest design).

Cast iron, one piece piston. (Minimum weight, best transfer of heat.)

Forged steel crosshead. (Maximum strength and flexibility.)

Forged steel connecting rod. (Maximum strength—minimum weight.)

Built-up crank shaft. (Makes possible more uniform and higher grade forgings.)

Spray valve encased in separate tube. (Can be removed without draining off circulating water).

Hard iron cylinder liner. (Long life.)

Liner stuffing-box. (Allows taking up jacket leaks without pulling liner.)

Adjustable crosshead shoe. (Adjustment made with laminated shims.)

Cast steel connecting rod boxes and main bearing shells. (Boxes and shells machined all over and lined with high-grade babbitt metal.)

WORTHINGTON PUMP AND MACHINERY CORPORATION

Executive Offices: 115 Broadway, New York City. Branch Offices in 24 Large Cities

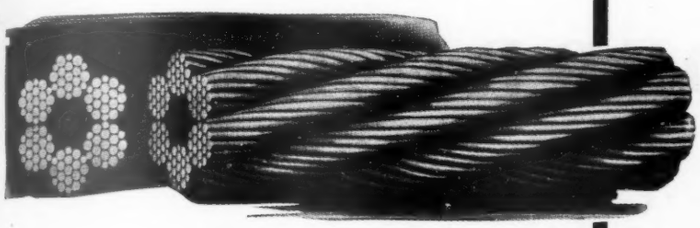
W-206.8

WORTHINGTON

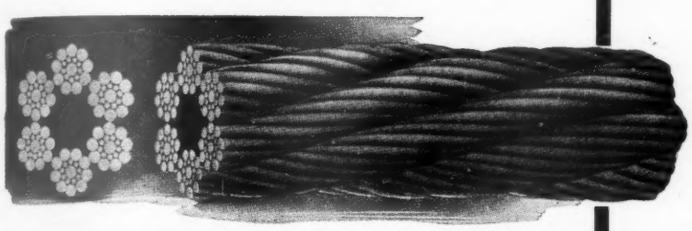
Deane Works, *Holyoke, Mass.*
Blake & Knowles Works *East Cambridge, Mass.*
Worthington Works *Harrison, N. J.*
Laidlaw Works, *Cincinnati, Ohio.*
Hazleton Works, *Hazleton, Pa.*
Gas Engine Works, *Cudahy, Wis.*
Power & Mining Works *Cudahy, Wis.*
Snow-Holly Works *Buffalo, N. Y.*
Epping-Carpenter, *Pittsburgh, Pa.*

SELECT THE *RIGHT* LINE

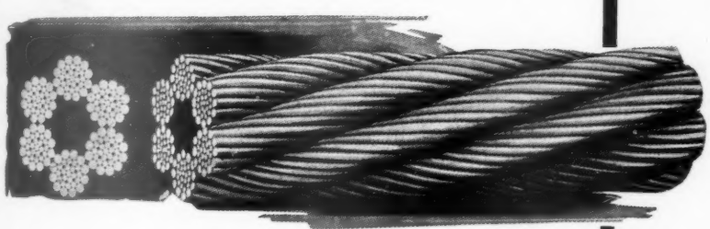
For Maximum Service in Drilling



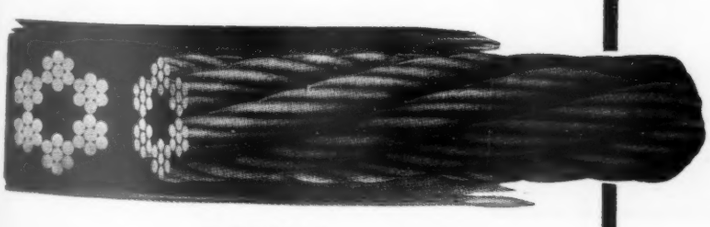
Standard 6x19



Muskogee Special 6x19



Special Rotary 6x31



Hard Laid 6x7

Now that there are wire lines especially designed to meet special conditions, it is a mistake to adhere to one style of line for all drilling purposes.

ROTARY DRILLING, for example, calls for an extra flexible line. Our 6x31 line was especially designed to meet this requirement. The small inside wires give extreme flexibility, while the larger outside wires resist wear. The Plow Steel grade in 1″ diameter is especially recommended. Our 6x31 is now used by 75% of our rotary customers.

For CABLE TOOL DRILLING we recommend our 6x19 WILLIAMSPORT Standard Drilling Cable. This line is unsurpassed for dependability and long wear.

ALL WILLIAMSPORT Lines are made in several grades of steel. Our representatives are thoroughly posted on wire line science. Let them advise you.

Williamsport Wire Rope Company
Kennedy Bldg., Tulsa, Okla.

District Offices:
Houston Graham Mildred Shidler Blackwell
Ardmore Holdenville Okemah Smackover
Arkansas City El Dorado Shreveport Casper

We Give Service in Every Important Field

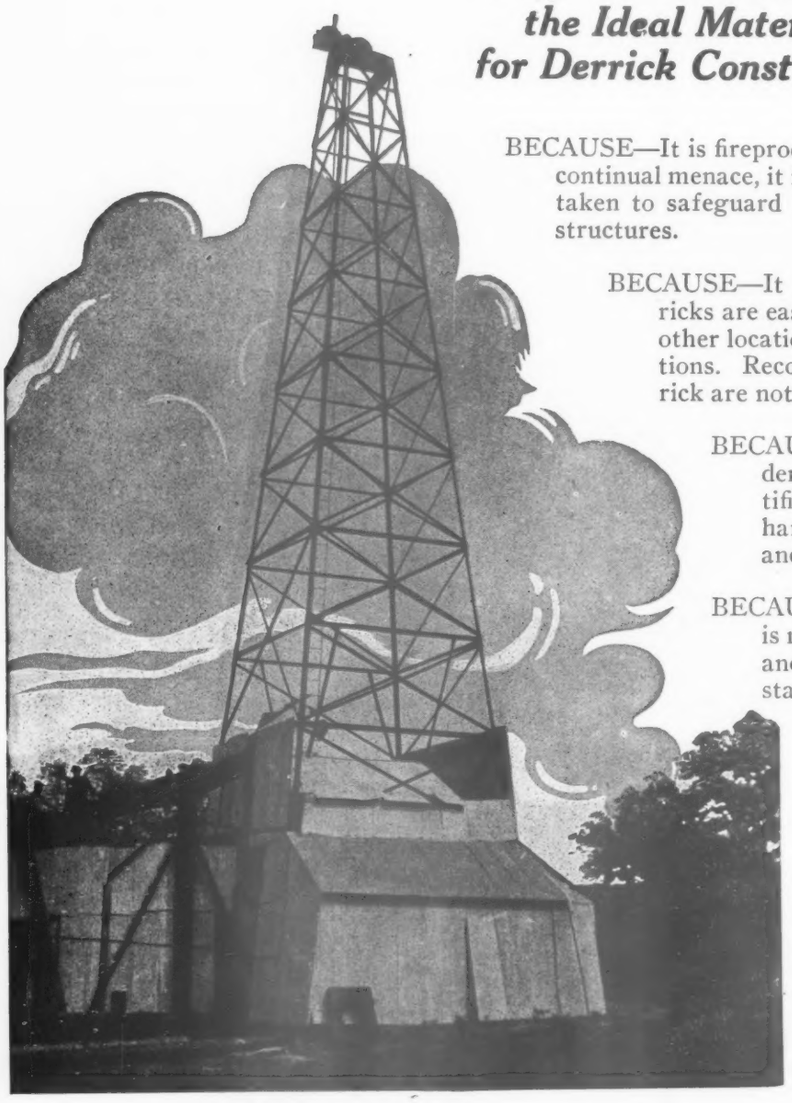
173

WILLIAMSPORT

CARNEGIE

All-Steel DERRICKS

Why is Structural Steel the Ideal Material for Derrick Construction?



BECAUSE—It is fireproof. In the oil industry where fire is a continual menace, it is only reasonable that every effort be taken to safeguard life and property by using fireproof structures.

BECAUSE—It is economical. Structural steel derricks are easily erected and easily removed to another location. They are not one-well propositions. Records of twenty or more wells per derrick are not unusual!

BECAUSE—It is durable. Structural steel derricks are strong and rugged—scientifically designed to withstand the hardest strains. They will not pull in and are practically windproof.

BECAUSE—It is efficient. Structural steel is rolled in a great variety of weights and sizes. An eight-inch angle, for instance, is rolled in eleven different weights. Given a certain load, it is a very simple matter to provide the required strength (figured on the factor of safety usual in the fabrication of steel for buildings) with exactly the right section — and without change in over-all dimensions. This close approximation is impossible in other steel.

A copy of our booklet, "Steel Derricks," is yours on request. It is well illustrated and will prove of interest.

Carnegie Steel Company

GENERAL OFFICES: CARNEGIE BUILDING 434 FIFTH AVENUE **PITTSBURGH, PA.**

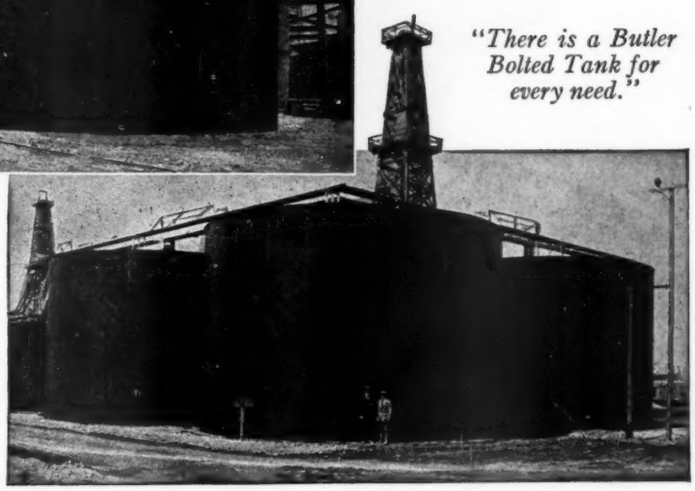
Butler Bolted Tanks

—*Where Service and Durability are desired*

The two tanks shown at the left are of 3,000 and 5,000-barrel capacity.

They were erected for the Jameson Petroleum Co. at Santa Fe Springs, Cal.

"There is a Butler Bolted Tank for every need."



At the right are shown three Butler Bolted Tanks of 5,000-barrel capacity each.

These tanks were erected for the Globe Petroleum Co., at Huntington Beach, Cal.

Dependability—Reliance!

Butler Bolted Tanks are found where good tanks are used. Dependability means much to the user. Reliance means safety. The user of Butler Bolted tanks knows he can trust them because they are designed by experienced engineers with the proper factors of safety. Butler Bolted Tanks are erected for flow tanks and for the storage of crude, gasoline or water. Carried in stock for immediate shipment and erection, tanks from 65 barrels capacity up to and including 10,000 barrels.

Descriptive literature and prices sent on request.

The following reliable organizations can serve you in their respective territories. Ask them, or get into direct connection with us.

May Tank & Sup. Co.
Casper, Wyoming
and branches

M-K Tank Co.
Wewoka, Okla.

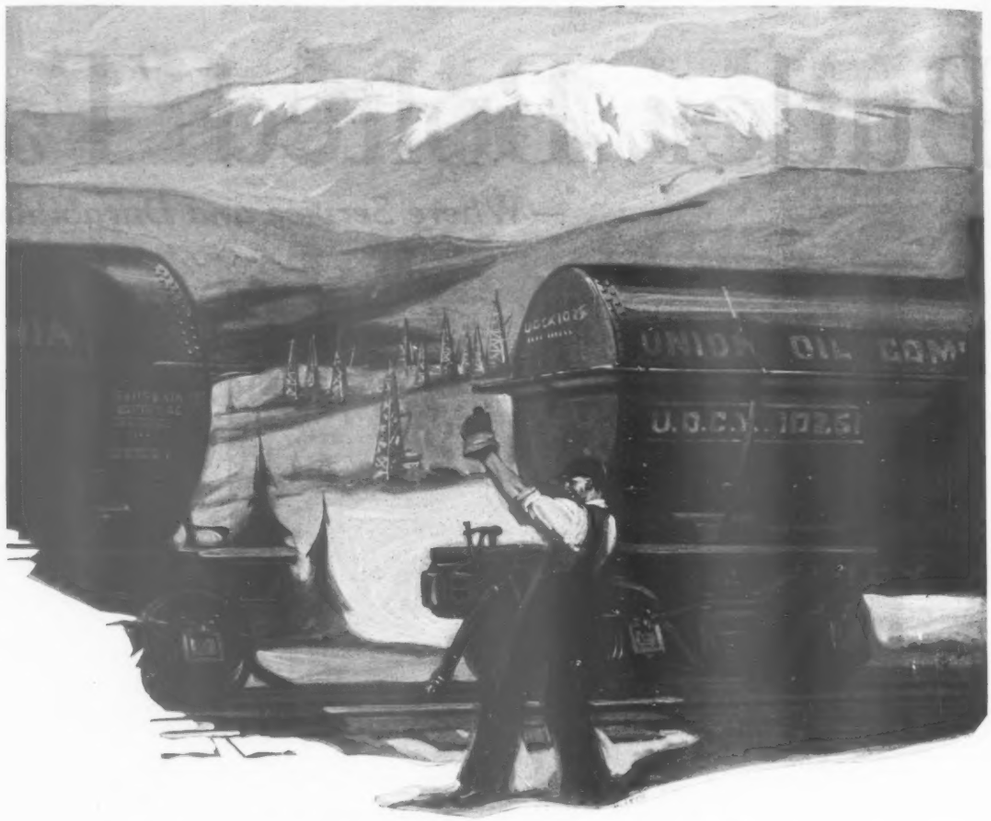
Butler Manufacturing Co.
A. G. Bartlett Bldg.,
Los Angeles, Calif. Tel. 65457

BUTLER MFG. CO.

KANSAS CITY, MO.
MINNEAPOLIS, MINN.

M. & V. Tank Co.
Wichita Falls, Texas
and branches

Standard Tank & Steel Works, Ranger, Texas
and branches



Liquid Gold in the West

GATX GENERAL AMERICAN

California is the land of yellow treasure. From the flaming sunrise over the high Sierras to the Golden Gate itself, all is gold. When, in 1848, a bit of gleaming quartz was discovered at Sutter's Fort, near San Francisco, men stampeded madly to find more of it; it was gold!

Years later, at the southern end of the state where oranges and poppies gild the lowlands, oil, a kind of liquid gold, stained the rich sands with a dark flood of treasure that has taxed every resource of transportation.

General American Tank Cars have dramatized a massive transportation problem as they pour eastward across the mountains in vast trains with fuel for ten million motors.

Oil's product, gasoline, is a vital latent force—so powerful that its transportation has been a serious problem for shippers. It was never solved until GA engineers devised the insulated car which today is carrying all but a fraction of the gasoline of the country.

A leasing fleet of 12,000 GATX tank cars is maintained for immediate transportation of all liquids anywhere; a skilled traffic organization stands ready to route cars in any quantity wherever you may need them.

GENERAL AMERICAN TANK CAR CORPORATION

NEW YORK
17 Battery Place

CHICAGO
111 West Monroe St

SAN FRANCISCO
311 California St.

Call in a G A representative and confer with him on your transportation problems. You will discover how much further G A service extends beyond the building of good cars well.

245

REPUBLIC SUPPLY CO.

REPUBLIC IRON & STEEL CO.'S TUBING, CASING, LINE DRIVE AND LINE PIPE.

STANDARD SEAMLESS TUBE CO. SEAMLESS UPSET ROTARY DRILL PIPE.

AMERICAN WELL & PROSPECTING CO. "GUMBO BUSTER" ROTARY EQUIPMENT.

AMERICAN STEEL & WIRE CO. AND BRODERIC & BASCOM WIRE ROPE.

Oil Field Supplies And Complete Field Equipment

Rotary or Cable

District Headquarters
HOUSTON, TEXAS
Mexia, Texas
Corsicana, Texas
(Mildred)

District Headquarters
SHREVEPORT, LA.
Haynesville, La.
El Dorado, Ark.
Smackover, Ark.

District Headquarters
WICHITA FALLS, TEXAS
Graham, Texas
Breckenridge, Texas
Electra, Texas
Burkburnett, Texas
Wilson, Okla.
Duncan, Okla.
Wirt, Okla.

District Headquarters
TULSA, OKLA.
Tonkawa, Okla.
Henryetta, Okla.
Yale, Okla,
Shidler, Okla.
Pawhuska, Okla.
Barnsdall, Okla.
Haskell, Okla.
Beggs, Okla.
Slick, Okla.
Bristow, Okla.
Wewoka, Okla.

Gas oil is a by-product of the Dubbs Process when cracking fuel oil

And when we say cracking fuel oil by the Dubbs Process we mean running it raw to the Process

Converting fuel oil into gas oil and then cracking, isn't cracking fuel oil—it is cracking gas oil and it is converting a large part of the gas oil back into fuel oil

Every product of the Dubbs Process when cracking fuel oil has an equal or greater value than the original charging stock

Universal Oil Products Company
Owners of the Dubbs Process
208 South La Salle Street Chicago

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

INDISPUTABLE EVIDENCE NO. 4

409-410 El Dorado National Bank Building — Phone 1220

Marshall Oil and Gas Corporation

El Dorado, Kansas

May 1, 1923

TO WHOM IT MAY CONCERN :

This is to advise anyone concerned that Marshall Oil and Gas Corporation on the Dame lease in Greenwood county,, sold their oil to the pipelines for 8 winter months from October to May, at 36 Baume from ordinary steel tanks.

At this time we saw fit to buy some Black, Sivalls and Bryson tanks and have same company work over our stock tanks, making them vapor-tight with the combination vacuum and pressure valve and thief hole cover . The result is as follows : our oil previously being sold at 36 Baume was raised in gravity to 41.5 Baume which gave us additional premium in summer over winter price with old tanks.

In quantity we saved approximately 10 per cent of the total production.

I consider these tanks pay for themselves several times a year and that they are a very decided asset to our property or any property and are beyond a doubt worth more in comparison to results obtained than any other tank , I have ever used.

THE MARSHALL OIL AND GAS CORP.

By E M Marshall Pres-

"Worth more in comparison to results obtained than any other tank."

We don't mind confessing that we consider the letter reproduced above about the best tribute paid to Perfection Vapor Pressure Tanks.

In it is embodied about everything we have ever claimed. Holding up gravity, saving volume, paying for themselves in short order—all those characteristics are testified to by Mr. Marshall.

In view of that sort of testimony, you can ill afford to let evaporation "make a monkey out of you any longer," as Ring Lardner would say. Get in touch at once with our nearest branch representative.

Remember, Perfections on installations will begin paying daily dividends.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

A Story of Oil Field Supply Quality and Service ~ told in Trade-marks!

DARLING
GATE VALVES
FITTINGS
IRON CITY TOOLS
TRIMO TOOLS
MOON LIGHTING OUTFITS
BEAVER Quality Tools
DARCOVA VALVE CUP
OKLAHOMA IRON WORKS TULSA, OKLA.
INTERNATIONAL SUPPLY COMPANY ISCO
FOOS ENGINE
REX CHAIN
LIMESTONE PULLEYS
"IT'S A WILSON"
KEWANEE Oil Country Boilers
Everything for the Oil Field
Simplex Jacks
AMERICAN STEEL & WIRE
DODGE
DURNELL UNDERPULL
KV
OIL WELL DUNN TOOLS
CHESTER
YALE

INTERNATIONAL SUPPLY CO.

Branch stores in 18 of the leading oil field towns in Oklahoma, Kansas, Wyoming and Montana.

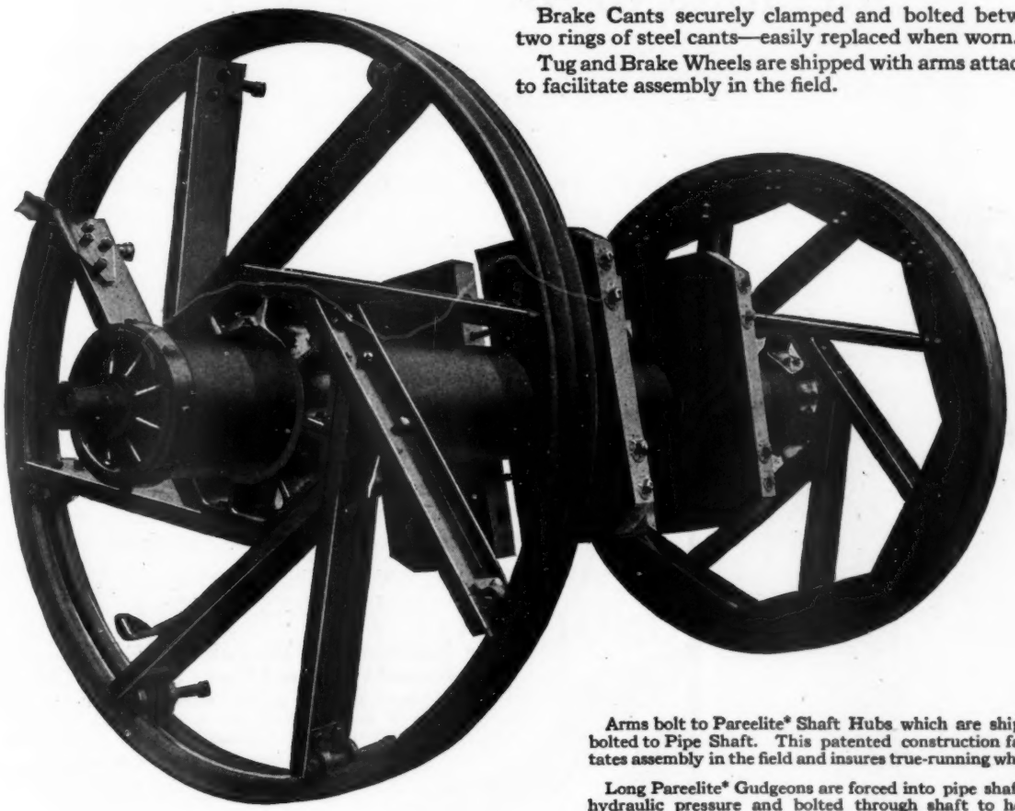
General Offices and Works
Tulsa, Okla.
District Offices: Denver, Colorado and Fort Worth, Texas

PARKERSBURG
METAL TUG
STEEL BULL WHEELS

"V"-Grooved Pareelite* Tug Rim affords positive traction.

Brake Cants securely clamped and bolted between two rings of steel cants—easily replaced when worn.

Tug and Brake Wheels are shipped with arms attached to facilitate assembly in the field.



Arms bolt to Pareelite* Shaft Hubs which are shipped bolted to Pipe Shaft. This patented construction facilitates assembly in the field and insures true-running wheels.

Long Pareelite* Gudgeons are forced into pipe shaft by hydraulic pressure and bolted through shaft to heavy gudgeon bands.

*Pareelite is a "High Manganese" metal—not cast iron—that will sustain a load of 4,320 pounds on arbitration test bar of American Society for Testing Materials, and with only 7/64 inch deflection at breaking point. It has an ultimate tensile strength of 33,680 pounds per square inch.

Parkersburg Metal Tug Steel Bull Wheels are made with standard length shafts and for 9-inch or 12-inch Brake Irons

Ask for detailed information

The PARKERSBURG RIG & REEL CO.

Main Office and Works, Parkersburg, West Virginia. ***New York Office,*** 30 Church St., Room 1510

California Representatives, MESSRS. BUCK & STODDARD
485 California St., San Francisco, Calif.; Box 720, Arcade Station, Los Angeles, Calif.

District Offices and Distributing Warehouses from which Parkersburg Service is available

TEXAS
*Houston
Breckenridge
Corsicana
Graham
Iowa Park
Mexia
Orange
Ranger

WYOMING
*Casper

LOUISIANA
*Shreveport
Haynesville

KANSAS
*Eldorado
Madison

W. VIRGINIA
Parkersburg
Clarksburg

ARKANSAS
*El Dorado
Smackover
McNeil

MONTANA
Sunburst

OKLAHOMA
*Tulsa
Bristow
Drumright
Henryetta
Hominy
Okmulgee
Slick
Tonkawa
Wilson
Shidler
Wetumka

*District Offices

International "IDECO"

MILLIONS OF DOLLARS OF LOSS

Startling but true, as proved by the history of every big storm in the oil fields. Scores of wooden derricks wrecked —suspended operations and consequent enormous losses of oil production. At intervals, almost every year, it happens.

"IDECO" Steel Derricks (galvanized) overcome wind and fire hazards. Wells, so equipped, continue production despite the worst storms.

Strength of structural steel derricks is a certain quantity. Structural shapes are rolled in a great many more sizes and weights than any other form of steel construction. No need to pay for extra weight as a safety factor. "IDECO" design provides the right section in the right place—no guesswork or over-weight about it. The safety standards of the American Society for Testing Materials to which we adhere rigidly, make sure that "IDECO" Derricks will do the work required with entire satisfaction.

STANDARDIZE ON "IDECO" STEEL EQUIPMENT—IT IS WISE ECONOMY

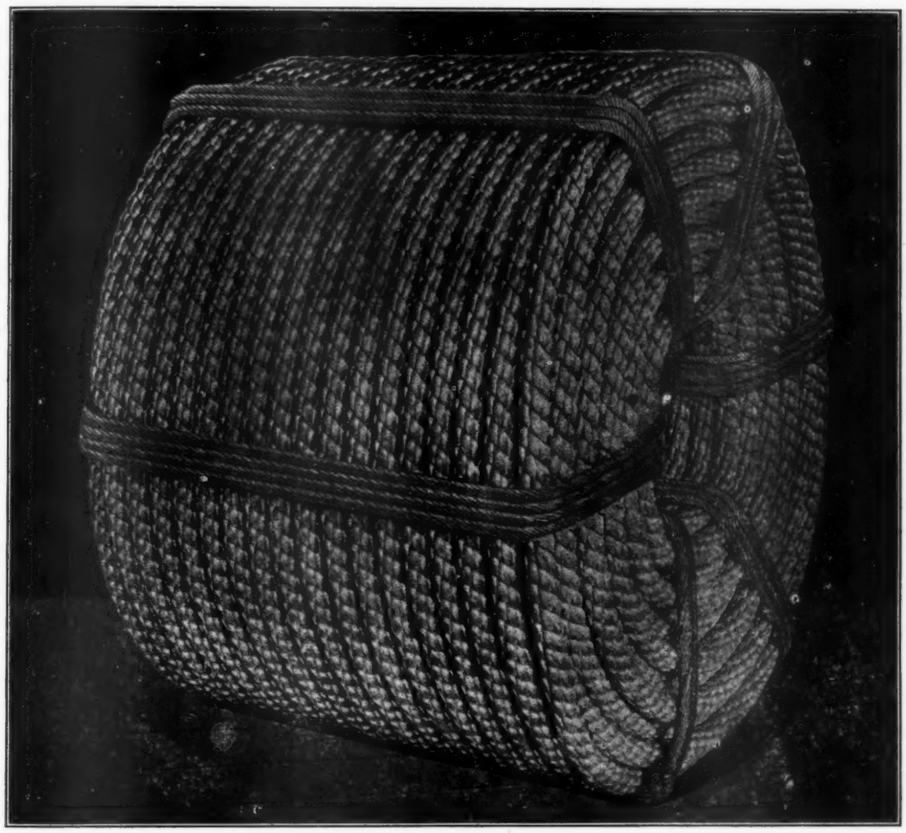
The International Derrick and Equipment Co.
General Offices and Plant: Columbus, Ohio

The largest company devoted exclusively to the manufacture of Steel (Galvanized) Equipment for the Oil, Gas and Artesian Industries

Branch Offices and Warehouses:
Tulsa Shreveport Houston Casper
Los Angeles Bakersfield Oil City
Export Representation

Above: International Steel (galvanized) Derrick in service of the Pure Oil Co. View shows well being shot after it was completed with "IDECO" equipment.
Right: View of "IDECO" all steel rig—the standard with many big companies.

"IDECO" STEEL PRODUCTS for the OIL FIELD



Expert Drillers *Do* Prefer Columbian Cable

They know that for lasting qualities and fast work, it is necessary to have a "neutral" rope—that is, a line in which the four individual twisting stresses equalize each other. The tension being even on all parts prevents the strands from cutting-in or drawing.

Columbian Cable possesses these qualities, as machines of advanced design run by expert operators, construct a perfectly equalized Cable.

Judicious selection of extra long and tough pure Manila fibre also contributes to the durability acceded to Columbian Cable. The fact that drillers revert to Columbian when they are through experimenting with various lines,—is their silent testimony of Columbian superiority.

Columbian Cables, Sand Lines, Bull Ropes, etc., can always be identified by the red, white and blue *Tape-Marker* within the heart of one of the strands.

Sold at all National Supply Company Stores

Columbian Rope Company

Auburn, *"The Cordage City"* **N. Y.**

342-70 Genesee Street

Branches: New York Chicago Boston Houston

INDEX TO JOURNAL'S ADVERTISERS

A

Acme Fishing Tool Co.....
Acme Petroleum Co.....
Ajax Iron Works.....
Aldrich Pump Co.....
Alexander, R. E.....
American Car & Foundry Co.....
American Pipe Bending Machine Co.
American Rolling Mill Co.....
American Schaeffer-Budenberg Corp. 118
American Sheet & Tin Plate Co.... 89
American Well & Prospecting Co....
American Zinc, Lead & Smelting Co.116
Anderson, Carl B.....117
Anderson & Anderson.....118
Arbon, Paul & Co.....
Athey Truss Wheel Co.....115
Austin Co. .....
Axelson Machine Co.....

B

Baker Casing Shoe Co.....112
Ball Swivel Wrench Co.....
Barnickel, Wm. S. & Co.....127
Barnsdall Refining Co.....110
Bartlesville Supply Co..... 71
Bear Tractors, Inc.....
Beaumont Iron Works..... 90
Beckner, Lucien 116
Bessemer Gas Engine Co..... 41
Bignall & Keeler Machine Works... 81
Biggs Boiler Works Co..... 77
Black, Sivalls & Bryson, Inc..... 9
Borden Co. .....
Boykin Machinery & Supply Co.....
Braden Co., The.....
Bradford Motor Works.....
Brainard & Toulson.....
Bridgeport Machine Co.....Back Cover
Bristol Co. .....
Broderick & Bascom Rope Co..... 68
Brokaw, Dixon, Garner & McKee....118
Brown & Thomsen 117
Brown, Vergil Neal.....118
Brown Welding & Machine Co.....
Brownell Co. .....
Buckeye Traction Ditcher Co..... 73
Burhorn, Edwin Co.....
Burrell, George A.....116
Butler Mfg. Co..... 5
Byers, A. M., Co..... 70

C

Calorizing Co. 1
Capital Abstract & Realty Co.....109
Carnegie Steel Co.....4-127
Caudill, Samuel J.....117
Chain Belt Co.....
Champion Machine & Forging Co...
Chaplin-Fulton Mfg. Co.....
Chapman Valve Mfg. Co.....
Chicago Bridge and Iron Works..... 33
Chicago Pneumatic Tool Co..... 15
Chisholm-Moore Mfg. Co.....
Clapp, Frederick G.....114
Clark Bros. Co..... 45
Clark, Robert W.....114
Classified Wants 108-109
Close-to-Nature Co. 118
Columbian Rope Co..... 13
Columbian Steel Tank Co.....
Connolly, D. F., Agency, Inc.....
Consolidated Petroleum Engineers..114
Cook Paint & Varnish Co.....
Cooper, C. & G., Co.....
Cosden & Co.....
Crandall & Murta.....118
Crane Co. .....
Cummins Working Barrel Co.....
Cyclone Fence Co.....

D

Darling Valve Mfg. Co..... 47
Dart, E. M., Mfg. Co.....
Davis, G. M., Regulator Co.....
Dawson Towel Supply Co.....109
Deep Well Engineering Co.....
De Laval Separator Co..... 97
De La Vergne Machine Co.....
Delta Electric Co..... 87
Deming Co. 110
Detroit Belt Lacer.....114
Detroit Graphite Co.....
Dickey-Ashby-Fountain Co.....109
Dresser, S. R., Mfg. Co..... 25
Dunn Mfg. Co. .....

E

Eastern Torpedo Co.....112
Empire Refineries, Inc.....
Equitable Meter Co.....
Essex Brass Corp.....118
Ever-Grip Wrench Co.....
Exchange National Bank..... 67

F

Fairbanks-Morse & Co.....
Fay, Albert H.....118
Federal Engineering Co.....115
Federal Supply Co.....
Fenwick-Reddaway Mfg. Co.....
Fisher Governor Co.....
Flexible Steel Lacing Co.....
Foamite-Childs Corp. 51
Fohs, F. Julius 116
Fort Worth Laboratories 114
Foster & Reiter.....116
Foxboro Co., The, Inc.....118
France Packing Co.....110
Francis Bros & Co.....113
Franklin Valveless Engine Co..... 53
Freeborn Engineering Co.....113
Frick-Reid Supply Co..... 91

G

Gantz Tank Co.....
Gaso Pump & Burner Mfg. Co..... 49
Gas-Tite Device Co..... 85
General-American Tank Car Corp... 6
General Electric Co.....
Gilbert & Barker Mfg. Co.....
Gomory, W. L.....114
Goodrich, B. F., Rubber Co.....
Goodyear Tire & Rubber Co.....
Goulds Mfg. Co.....
Graver Corp. 83
Greene, Frank C.....116
Greene-Tweed & Co.....105
Griscom-Russell Co. .....
Guiberson Corp. 43
Gurley, W. & L. E.....113

H

Harris Bros. Co. 117
Harrisburg Pipe & Pipe Bending Co.
Hazard Mfg. Co.....
Henry, George W.....109
Herald Bros. 118
Hercules Corp. 94
Heydrick Mapping Co.....113
Hinderliter Tool Co.....
Holt Mfg. Co..... 93
Homestead Valve Mfg. Co.....
Hood, H. H.....115
Hoover Steel Ball Co.....
Hope Engineering & Supply Co..87-103
Hopkins, Edwin B.....116
Hough, Chas. N., Mfg. Co.....111
Hughes Tool Co.....
Hunt, Robert W., Co.....118
Huntley & Huntley.....115

I

Illinois Glass Co.....
Imperial Brass Mfg. Co.....
Imperial Oil Marketing Co.....
Industrial Construction Co.....
Ingersoll-Rand Co. .....
International Creosoting & Construction Co. .....
International Derrick & Equipment Co. 12
International Supply Co..... 10
Iron King Mfg. Co.....

J

Jarecki Mfg. Co.....
Jeffrey, G. 118
Jeffery, W. H., Co.....111
Jeffrey Mfg. Co. .....
Johns-Manville, Inc. .....
Johnson, Roswell H.....117
Jones, S. M., Co..... 55

K

Kansas City Hay Press Co.....104
Kansas City Structural Co.....
Kaw Boiler Works Co.....
Kellogg, M. W., Co..... 79
Kelly & Jones Co.....
Kelly-Springfield Tire Co.....
Kewanee Boiler Co.....
Kliewer Steam Snuffer Mfg. Co.....
Kirk & Hoover.....117

L

Lafe Speer Abstract Co.....109
Larkin & Co. 102
Lasky, Bernard H.....115
Leader Iron Works..... 80
Leader-Trahern Co. .....
Leidecker Tool Co..... 85
Lewis, James O.....114
Link-Belt Co. .....
Lockett, A. M., Co., Ltd.....
Logue, A. R. .....
Longyear, E. J., Co.....116
Ludlow Valve Mfg. Co.....
Lufkin Rule Co.....117
Lunkenheimer Co. 106

M

Magnolia Petroleum Co.....
Maloney Tank Mfg. Co..... 88
Marland Refining Co.....
Marsh Gauge Pole Co.....116
Matson, George C.....118
Matteson, W. G.....116
Messimer, H. H.....117
Metric Metal Works.....
Miller Improved Gas Engine Co....
Miller, Max B. & Co., Inc.....
Moon Mfg. Co.....
Moore, Lee C. & Co., Inc..... 39
Morrison Bros. .....
Munn & Co. 115
Myrick Machine Co..... 73

Mc

McCord Radiator Mfg. Co.....
McDonald, A. Y., Mfg. Co.....
McGrath, T. S. 112
McGregor Working Barrel Co.....
McNutt, V. H. 116

N

National Airoil Burner Co.....116
National Lead Co.....
National Supply Co.....64-65
National Transit Pump & Mach Co. 35
National Tube Co.....
National Turnbuckle Derrick Co....
New Bedford Cordage Co..... 59
Norris Bros. 100
North American Car Co.....
Northern Oil Information Bureau...113
Nye Tool & Machine Works.....115

O

O'Brien Steel Construction Co.....
Ohio Structural Steel Co.....
Oil Conservation Engineering Co.... 57
Oil Country Specialties Co.....
Oil Well Improvements Co..Front Cover
Oil Well Supply Co.....29-127
Oster Mfg. Co.....

P

Page Fence & Wire Products Assn. 69
Parker Cup & Specialty Co.....113
Parkersburg Machinery Co.....
Parkersburg Rig & Reel Co..... 11
Pattin Bros. Co.....
Penn American Refining Co..... 63
Pennsylvania Petroleum Co.....
Pennsylvania Tank Car Co.....104
Petroleum Iron Works 81
Petroleum Safety Appliance Co.....
Pforzheimer, Carl H. & Co.....
Pioneer Tank & Boiler Co.....115
Pittsburgh-Des Moines Steel Co.....
Pittsburgh Meter Co..... 116
Powell, Wm. Co.....
Power Engineering & Ignition Co., Inc. 111
Prewitt & Hauser.....117
Producers & Refiners Corp.....
.....Inside Front Cover
Pure Oil Co..... 75
Pyle National Co..... 95

Q

Quimby, Wm. E., Inc.....114

R

Ransomerian Business School.....113
Reading Iron Co.....
Reading Steel Casting Co.....112
Reed Roller Bit Co..... 93
Reid, Joseph, Gas Engine Co..... 61
Republic Iron & Steel Co..... 86
Republic Supply Co..... 7
Rich, John L.....117
Ring, Dewitt T.....114
Rock Island Plow Co..... 83
Roots, P. H. & F. M., Co.....
Rossendale-Reddaway Belting & Hose Co. .....
Ross-Meehan Foundries .....
Ruby, Glen M.....117
Ryerson, Joseph T. & Son.....117

S

Sand Springs Water Co.....100
Shaffer Specialty Co.....
Shaw, E. W.....114
Shipper's Car Line, Inc.....105
Sinclair Refining Co.....
Sistersville Tank & Boiler Works...102
Sivyer Steel Casting Co.....
Smith Separator Co..... 72
South Chester Tube Co.....117
Spence, H. M.....114
Spencer Petroleum Co.....
Stalder, Walter 116
Standard Engineering Co.....
Standard Machine & Tool Co.....
Stanley Belting Corp.....114
Star Drilling Machine Co..... 71
Stewart Iron Works Co.....
Stewart, Irvine E.....118
Stitt Ignition Co.....
Stockman & Fees.....
Stull, J. C.....114
Sullivan Co. .....
Sullivan Machinery Co.....107
Superior Tube Co.....

T

Taxman Refining Co..... 78
Taylor Instrument Co.....111
Texas Co., The .....
Texas Gulf Sulphur Co..... 79
Texas Oil Pump Co.....107
Thomas, J. Elmer.....117
Titusville Iron Works.....
Tnemec Paint & Oil Co..... 82
Todelo Pipe Threading Machine Co..106
Travelers Insurance Co..... 27
Trimont Mfg. Co.....100
Trumble Gas Trap Co.....101
Truscon Steel Co.....
Tucker, Jas. I., Co.....115
Tulsa Ice Co.....109

U

Union Machine Co..... 92
United Iron Works.....106
Universal Oil Products Co..... 8

V

Vanadium Corp. of America.....
.....Inside Back Cover
Villars, J. R.....115
Vogt, Henry, Machine Co.....

W

Ward-Way, Inc. 118
Washburne, C. W. 116
Waukesha Motor Co.....111
Weaver, Ralph, M., Jr.....118
Wells, O. W. & Co.....115
Westcott Valve Co..... 61
Westerman Bros. 115
Western Bank Supply Co.....100
Western Machinery Co.....
Westinghouse Electric & Mfg. Co....
Wharton, Wm. Jr. & Co., Inc..... 84
Wheatley Bros. .....
Wheeling Steel Corp.....
Whitlock Cordage Co.....
Wickwire-Spencer Steel Corp.....
Wilcocks, A. 115
Williams, J. H. & Co.....118
Williamsport Wire Rope Co..... 3
Winchester, Dean E.....115
Wood & Wood 117
Workman Sheet Metal Roofing Co..113
Worthington Pump & Mach. Corp... 2
Wright, Harry F.....114
Wyoming Map & Blue Print Co.....115

Y

Yale & Towne Mfg. Co..... 96
Youngstown Boiler & Tank Co.....

Little Giant Grinders perform a dual purpose. Grinding wheels and rotary brushes are interchangeable. Special features of the air motor include Invincible One-Piece Interchangeable Toggle and Centrifugal Oil Separator which keeps maintenance costs to a minimum.

Cable Wire Brush with separately renewable segments.

End view of radial Steel Wire Brush.

Why Complain of a Labor Shortage

WHEN you may be responsible for your share of it? Inventory your labor and learn if two men are being used where one man could do more and better work if properly equipped. In many plants these conditions do exist.

Recently a company internationally known were observed using the old hand method of scraping tanks preparatory to painting. It is difficult to realize any progressive concern so extravagantly using labor, when one man with a properly equipped Little Giant Air or Electric Grinder can do the work of several men on a cleaning job and release them for other urgent work. There would probably be enough labor to approximate the requirements if the available labor conserving devices were made use of to the utmost of their possibilities.

To insure a durable painting job the surface should be thoroughly cleaned before the paint is applied. Little Giant Grinders fitted with wire brushes will clean cheaper and faster than it can be accomplished by any other means. They remove all scale, rust, dirt and other matter in a thorough and complete manner, insuring paint pigments becoming more firmly imbedded in the surface. It goes on smoother, with greater uniformity and less paint is required, and it does not curl so easily when exposed to the elements.

Put Little Giant Grinders to work in your plant. You will profit!

Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

*Birmingham	Cleveland	Houston	*New York	Salt Lake City	Tulsa	Brussels	Havana	London	Montreal	Rotterdam	Shanghai	*Vancouver
*Boston	Denver	*Los Angeles	*Philadelphia	*San Francisco	Basle	*Buenos Aires	Helsingfors	Manila	Osaka	Santiago	Tampico	*Winnipeg
*Chicago	*Detroit	*Minneapolis	*Pittsburgh	Seattle	Berlin	Christiania	Honolulu	Milan	Paris	*Sao Paulo	Tokyo	
*Cincinnati	El Paso	New Orleans	Richmond	*St. Louis	Bombay	Dairen	Johannesburg	*Montevideo	*Rio de Janeiro	Seoul	*Toronto	

Canadian Pneumatic Tool Company, Montreal, manufacturers of Chicago Pneumatic products in Canada. P-182

BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS
GIANT OIL AND GAS ENGINES · · ROCK DRILLS · · COAL DRILLS

LITTLE GIANT

The World's Standard — *Air Grinder*

Why The Oil and Gas Journal Is Copyrighted Every Week

When an individual, a firm or a company, after years of laborious effort and painstaking organization, turns out a product of exceptional and recognized merit, it becomes necessary, sooner or later, to protect that product from cheap competition based on imitations of the successful output.

The inventor or discoverer of a process seeks the protection of a patent; the manufacturer registers his trade mark, and the author or publisher safeguards the fruits of his toil and enterprise under the law of copyright.

The information published each week in The Oil and Gas Journal covering every field and function of the petroleum industry involves an expenditure of time, labor and money in its collection, compilation and presentation too valuable to be left at the disposal of any who might find it profitable to republish it. Copyrighting "The Big Book," as it is known to oil men the world over, was, moreover, only fair to readers and advertisers, assuring them that the exclusive information for which they value The Oil and Gas Journal is not obtainable elsewhere. It is precisely the course followed by patent or trade mark to protect the public against substitutes and inferior products. It protects both producer and consumer, publisher and reader, and is in the interests of each alike, enabling the publisher to develop greater service to the reader.

Readers of The Oil and Gas Journal, it is known from frequent communications, appreciate very fully the labor and expenditure required to give them such complete and exhaustive records of the weekly progress of the industry as appear in each issue of "The Big Book."

"How do you do it?" is the common inquiry as a reader seeking, for example, news of the progress of a certain well in a remote field, turns to The Oil and Gas Journal and finds it right there in black and white. The promptness and accuracy of The Oil and Gas Journal's field reports have long made it the recognized authority on production.

Refiners and marketers are increasingly regarding The Oil and Gas Journal as their publication. The informing and helpful special articles have won their instant approval. The nation-wide market service which furnishes quotations from every section is known to be absolutely dependable while the charts, graphs and monthly refinery checks keep them posted on every detail of their business.

The 130 or more pages of "The Big Book," big pages, too, are each week packed tight with information that every oil man should know. It is invaluable for current news and priceless as a record. Questions are continually arising that can be answered instantly and only by reference to "The Big Book." It is accepted as authority wherever oil men meet. They know that The Oil and Gas Journal has access to the latest and most important facts, that it has correspondents in every field and market. Published at the Oil Capital, the center of petroleum news, it is right on the spot to the moment of going to press.

The Big Exclusive Features appearing each week in The Oil and Gas Journal have become so valuable that readers pressed for time have facetiously complained that "The Book" was getting too big but confessed they always managed to read it, at home if not at the office. No other publication dealing with petroleum attempts to cover the ground so thoroughly reported in detail each week in The Oil and Gas Journal.

ORDER BLANK

The Oil and Gas Journal

Tulsa, Okla.,

You are hereby directed to mail The Oil and Gas Journal to me for_____ year. Enclosed find remittance $_____

Classify my interests as checked by me

____Producing ____Refining

____Equipment ____Marketing

Name _____

Address _____

City _____

U. S. or Mexico
One Year.....$6.00
Six Months..... 3.00
FOREIGN 7.00

ORDER NOW

It Will Help You